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Date: November 16, 2000

Attorney Docket No. ASA-945

To: Assistant Commissioner for Patents
Washington, D.C. 20231

Sir: Transmitted herewith for filing is the patent application of:

Inventor: T. MORITSU et al (SEE ATTACHED LIST)

For:
METHOD FOR MAKING CONTRACT AND SYSTEM FOR PROCESSING CONTRACT

Enclosed are.

- [X] 26 Sheets of Drawings
- [X] This application is being filed without an executed Declaration.
- [X] Priority is claimed from Japanese Application No. 2000-184561 filed June 15, 2000. [ ] A certified copy is attached herewith.
- [X] Copies of the disclosure documents listed on the attached PTO 1449 form and [X] discussed in the specification or [X] attached Information Disclosure Statement.
- [ ] A verified statement to establish small entity status under 37 CFR 1.9 and 1.27.
- [X] Specification: Abstract X, Description 61 pages; and 26 claim(s).
- [ ] Preliminary Amendment.
- [ ] Executed Declaration.

The filing fee is calculated as shown below:

For:	No. Filed	No. Extra
Basic Fee		
Total Claims	26 -20=	* 6
Indep Claims	13 - 3 =	* 10
[ ] Multiple Dependent Claim (s)		

* If difference is less than zero then enter '0' in second column

Small Entity			Large Entity	
Rate	Fee	OR	Rate	Fee
	$ 355			$ 710
x 9	$		x 18	$ 108
x 40	$		x 80	$ 800
+ 135	$		+ 270	$ 0
Total	$		Total	$ 1,618

- [X] A check in the amount of $ 1,618.00 is enclosed for the filing fee.
- [X] The Commissioner is hereby authorized to charge any additional fees that may be required to Deposit Account No. 50-1417.

Respectfully Submitted,

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ASA-945
E5569-01ES

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ASA-945
E5569-01ES

Title of the Invention

METHOD FOR MAKING CONTRACT AND SYSTEM FOR PROCESSING CONTRACT

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METHOD FOR MAKING CONTRACT AND SYSTEM FOR PROCESSING CONTRACT

BACKGROUND OF THE INVENTION

The present invention relates to a method for making an electronic contract for provision of a commodity or service, and more particularly to a system for processing the contract.

As a background art, the JP-A-7-141422 has disclosed the system of writing a content of a conditional contract and data handwritten on a customer's check area and a simulation program on an IC card, passing the IC card on which the data was written to the customer, prompting a salesman to make a contract document on the content of the conditional contract in a branch office, checking if the contract document made by the salesman is consistent with the content of the conditional contract written on the IC card when the salesman calls on the customer, prompting the customer to describe the necessary items on the contract document and seal on a proper section if both are consistent with each other and the customer does not wish to change the content.

As another background art, the JP-A-8-149124 has disclosed an information delivering system of allowing an information provider to manage a communication history and a user to put delivery information on

a card.

However, the invention disclosed in the JP-A-7-141422 provides a capability of preventing a deceit until the contract is sealed. On the contrary, the invention does not consider the deceit to be done after the contract is sealed, for example, the unjust rewriting of the contract or the conditional contract. If a conflict on the contract takes place between both concerned parties after the contract is sealed, it is necessary to prove the content of the contract document or the conditional contract document written when it is made originally for the purpose of determining which of the parties is just. Since the invention prepares no means of proving the correct contract after the contract is sealed, the breach of contraction of one of the parties may impair the benefit of the other party.

Further, the invention disclosed in JP-A-8-149124 provides a capability of determining if a user receives delivery information. However, the invention does not consider the rewrite of the delivery information by the user. Hence, the invention does not solve the foregoing problem as well.

Moreover, the inventions disclosed in JP-A-7-141422 and JP-A-8-149124 do not consider an unjust deed for a program for describing a content of a contract on a contract document. For example, the deceive method called the Trojan Horse enables a correct signature to be deceivingly displayed on a screen but another

signature to be actually written on an electronic signature document. This kind of case may impair the benefit of the party having described the content of contract by using such an unjust program.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a method for making an electronic contract and a system for processing a contract which are arranged to lessen the damage of one concerned party caused by the breach of contract by another concerned party.

It is a further object of the present invention to provide a method for making an electronic contract and a system for processing a contract which are arranged to prevent a description program for describing a content of a contract on an electronic contract document from being unjustly operated and thereby to improve the safety of the contract.

According to an aspect of the invention, the system includes the steps of obtaining description data having a content of description presented to another party by one concerned party with a contract and data for specifying the content of description before making an electronic contract for provision of a commodity or service, creating contract data containing the description data or specifying data, and writing an electronic signature of one or both of the concerned parties with the contract data. Hence, since the contract data

containing the description data or the specifying data is created, the content of description about the contract may be specified, so that the damage of one party of the contract caused by the breach of contract by the other party may be lessened.

According to the invention, the system has a function of corresponding the contract data containing the content of contract for provision of a commodity or service with the description data containing the content of description about the commodity or service transferred between the concerned parties of the contract before the contract is made by using the inherent data in the description data. In order to correspond the contract data with the description data, the content of description about the contract may be specified, so that the damage of one concerned party of the contract caused by the breach of contract by the other concerned party may be lessened. Further, since the correspondence is done by using the inherent data, an unjust deed such as interpolation of the description data may be detected.

The present invention concerns with the method for making an electronic contract for provision of a commodity or service. The method includes the steps of obtaining a description program for prompting both concerned parties of the contract to describe a content of the contract on an electronic contract document and specifying data for specifying the

description program, creating the contract data containing the description program or the specifying data, and writing an electronic signature of both or either of the concerned parties with the contract data. Hence, since the contract data contains the description program or the specifying data, it is possible to prevent an unjust operation of the description program for describing the content of the contract and thereby to improve the safety of the contract.

The invention has a function of corresponding the description program for describing the content of the contract for provision of a commodity or service on an electronic contract document with the contract data obtained by describing the content of the contract on the electronic contract document by using the inherent data in the description program. Since the invention corresponds the description program with the contract data, it is possible to prevent an unjust operation of the description program for describing the content of the contract on the electronic contract document and thereby to improve the safety of the contract. According to the invention, the correspondence is done by using the inherent data, the interpolation of the description program may be detected.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram showing a system according to a first embodiment of the invention;

Fig. 2 is a flowchart showing transfer of messages and data between processes in the first embodiment of the invention;

Fig. 3 is a flowchart showing a process of receiving description data in the first embodiment of the invention;

Fig. 4 is a flowchart showing a process of sending the description data in the first embodiment of the invention;

Fig. 5 is a flowchart showing a process of starting a contract in the first embodiment of the invention;

Fig. 6 is a flowchart showing a process of sending a description of the content of the contract in the first embodiment of the invention;

Fig. 7 is a flowchart showing a process of describing the content of the contract in the first embodiment of the invention;

Fig. 8 is a flowchart showing a process of sending the content of the contract in the first embodiment of the invention;

Fig. 9 is a flowchart showing a process of sending the content of the contract in the first embodiment of the invention;

Fig. 10 is a flowchart showing a process of writing a signature on contract data in the first embodiment of the invention;

Fig. 11 is a view showing a structure of a

commodity list in the first embodiment of the invention;

Fig. 12 is a view showing a structure of a contract content list in the first embodiment of the invention;

Fig. 13 is a view showing a structure of a description data storage area in the first embodiment of the invention;

Fig. 14 is a view showing a structure of a description data storage area in the first embodiment of the invention;

Fig. 15 is a view showing a structure of description data in the first embodiment of the invention;

Fig. 16 is a view showing a structure of contract data in the first embodiment of the invention;

Fig. 17 is a view showing a structure of the content of the contract in the first embodiment of the invention;

Fig. 18 is a view showing a structure of the content of the contract (securities) in the first embodiment of the invention;

Fig. 19 is a view showing a structure of a negotiating ID in the first embodiment of the invention;

Fig. 20 is a view showing a system arrangement in a second embodiment of the invention;

Fig. 21 is a flowchart showing transfer of

messages and data between processes in the second embodiment of the invention;

Fig. 22 is a flowchart showing a process of describing a content of a contract in the second embodiment of the invention;

Fig. 23 is a flowchart showing a process of sending a contract content in the second embodiment of the invention;

Fig. 24 is a flowchart showing a process of writing a signature for creating the contract data in the second embodiment of the invention;

Fig. 25 is a flowchart showing a process of writing a signature on the contract data in the second embodiment of the invention;

Fig. 26 is a view showing a structure of a template for displaying the content of the contract in the second embodiment of the invention;

Fig. 27 is a view showing a structure of the contract data in the second embodiment of the invention;

Fig. 28 is a view showing a structure of a contract content display template list in the second embodiment of the invention;

Fig. 29 is a view showing a system arrangement in a verifying system in the second embodiment of the invention;

Fig. 30 is a flowchart showing a verifying process in the second embodiment of the invention; and

Fig. 31 is a view showing a structure of a contract data storage area in the second embodiment of the invention.

DESCRIPTION OF THE EMBODIMENTS

Hereafter, the description will be oriented to the embodiments of the invention.

In the following embodiments of the invention, the term "contract data" means data in which a content of a contract for provision of a commodity or service is contained, that is, the data constructed by describing the content of the contract in an electronic contract document (referred to as "an electronic contract document"). Then, when both of the concerned parties with the contract agree with each other (for example, when the electronic signatures (containing digital signatures) of both of the parties are affixed to the content of the contract), it is determined that the contract is concluded.

The term "description data" means the data in which the content of description about the commodity or service to be transferred between the parties of the contract before the contract for the provision of the commodity or service reaches the conclusion. The content of description about the commodity or service includes a description about the commodity or service unilaterally presented to the covenanter by a covenantee, a question (content of request for descrip-

tion) or a request (content of negotiation) presented to the covenanter by the covenantee, an answer (content of answer for description) to the question or the request of the covenantee by the covenanter, a description about a commodity or service unilaterally presented to the covenanter by the covenantee, a question (content for request for description) or a request (content of negotiation) presented to the covenantee by the covenanter, an answer (content of answer for description) presented to a question or a request of the covenanter by the covenantee, and so forth.

The term "proof data" means the data in which contained is the proof that the content of description presented by one concerned party (covenanter or covenantee) is created by the other concerned party or the proof that one party agrees with the content of description presented by the other party (covenanter or covenantee). It is preferable that it is an electronic signature.

A commodity is any object to be commercially dealt. Hence, it includes an corporeal property produced for the purpose of being exchanged in the market and having a worth in itself, an incorporeal material such as electricity, heat, light and odor, an incorporeal property such as an industrial property, a copyright, an ownership of a real estate, and a pledge, a security such as a stock or a bond, a work of art,

and an antique.

The term "inherent data" means a data string having an inherent length of a given original text (such as description data or contract data). If the original text is changed, therefore, the inherent data is changed accordingly. The inherent data may be the data obtained by compressing the original text at a given rate. In actual, preferably, it may be a hash value of the original text.

The term "service" means the object to be commercially dealt. For example, it includes provision of funds, transportation of persons or goods, communicating means, provision of information, cosmetics and hairdressing, health care, consultation about conflict, provision of physical or intellectual service, provision of houses or accommodations, provision of means and facilities for education, provision of amusement facilities, and provision of real estates.

The following description will be focused on the contract for the provision of a commodity for the convenience's sake. In place of the commodity, it goes without saying that the contract may concern with the provision of a service.

Hereafter, the description will be oriented to the first embodiment of the invention with reference to Figs. 1 to 19.

The system for processing a contract that realizes the first embodiment of the invention provides

a covenanter system 1100, a covenantee system 1200 and a network 1300. In this embodiment, one or more covenanters and one or more covenantees are the concerned parties who would like to make an electronic contract. The covenanter is a person who presents a contract content 2160 to be discussed below. For example, the covenanter is a person who presents a commodity (sales man, for example). The covenantee is a person who is given the contract content 2160 by the covenanter. For example, the covenantee is a person who receives a commodity (a consumer, for example). According to the contract content, however, the covenanter may be a person who receives a commodity, while the covenantee may be a person who presents a commodity. The covenanter system 1100 is a system to be used by the covenanter. The covenantee system 1200 is a system to be used by the covenantee. The network 1300 is served to transfer data between the covenanter system 1100 and the covenantee system 1200. For example, the network 1300 is the internet, an intranet, or a radio communication. Hence, the covenanter system 1200 may be a general-purpose personal computer or a mobile terminal (such as a portable phone or PHS (personal handyphone system)). In addition, the covenanter system 1100 and the covenantee system 1200 may be integrally composed without using the network 1300.

The covenanter system 1100 includes a storage

unit 1110, a communication unit 1120, a processing unit 1130, an input unit 1140, an output unit 1150, and a bus 1160. The storage unit 1110 serves to store a program and a data to be processed by the covenanter system 1100. It may be a memory or a harddisk, for example. The communication unit 1120 is connected with the network 1300 so that it may relay the transfer of the data. It may be a network interface board, for example. The processing unit 1130 serves to execute the processing according to the processing program stored in the storage unit 1110. It may be a CPU. The input unit 1140 serves to read a character string, speech, a picture, and a moving picture from the outside, convert such kind of data into the corresponding digital data, and then put the digital data into the storage unit 1110. For example, the input unit 1140 may be a keyboard, a microphone attached with an analog-to-digital conversion function or a camera attached with an analog-to-digital conversion function. The output unit 1150 serves to output the data of a character string, speech, picture or moving picture into the outside as the character string, the speech, the picture and the moving picture. It may be a display or a speaker attached with a digital-to-analog conversion function. The bus 1160 serves to relay the transfer of the data among the units (the storage unit 1110, the communication unit 1120, the processing unit 1130, the input unit 1140, and the output unit 1150)

connected to the bus 1160.

The covenantee system 1200 includes a storage unit 1210, a communication unit 1220, a processing unit 1230, an input unit 1240, an output unit 1250, and a bus 1260, which have the equivalent functions to the storage unit 1110, the communication unit 1120, the processing unit 1130, the input unit 1140, the output unit 1150, and the bus 1160, respectively. The storage unit 1110 serves to store a secret key 2110, a covenanter ID 2120, a public key of a covenantee 2270, a commodity list 4110, a contract content list 4120, a contract content description list 4130, a commodity list sending process 3110, a negotiating ID sending process 3120, a description data sending process 3130, a description data receipt checking process 3140, a contract content description sending process 33150, a contract content sending process 3160, a contract data signing process 3170, and a contract data receiving process 3180. The storage unit 1110 includes a description data storage area 5110 and a contract data storage area 5120. These kinds of data, process, and storage areas will be discussed below in detail. The storage unit 1210 stores a secret key 2210, a covenantee ID 2220, a public key of a covenanter 2170, a description data receiving process 3210, a contract starting process 3220, and a contract data creation signing process 3230. The storage unit 1210 includes a description data storage area 5110 and a contract data

storage area 5120.

The overall flow of the process will be described with reference to Fig. 2. Fig. 2 shows the flow of the data (containing messages) to be transferred between the processes to be executed by the covenanter system 1100 and the covenantee system 1200 along a time axis from the upper to the lower of the Figure.

A process 12100 included in the covenantee system includes a description data receiving process 3210, a contract starting process 3220, a contract content describing process 3230, and a contract data creation signing process 3240. The process 12100 is executed by the processing unit 1230 included in the covenantee system 1200. A process 12200 included in the covenanter system includes a commodity list sending process 3110, a negotiating ID sending process 3120, a description data sending process 3130, a description data receipt checking process 3140, a contract content describing process sending process 3150, a contract content sending process 3160, a contract data signing process 3170, and a contract data receiving process 3180. The process 12200 is executed by the processing unit 1130 included in the covenanter system 1100. In addition, the contract data creation signing process 3240 may be executed by the processing unit 1130 included in the covenanter system 1100.

A series of processes realized by the

transfer with the description data receiving process 3210, the commodity list sending process 3110, the negotiating ID sending process 3120, the description data sending process 3130, and the description data receipt checking process 3140 are the processes of storing the description content such as questions, requests, their responses or negotiating contents to be transferred between the covenanter and the covenantee (that is, between the covenanter system 1100 and the covenantee system 1200) at the previous stage of the contract as the description data 2150 to be discussed below in the storage unit 1110 of the covenanter system 1100 and the storage unit 1210 of the covenantee system 1200 and saving the data therein. If the covenantee system 1200 is requested to be small and lightweight since the covenantee system 1200 is a portable terminal, the description data 2150 may be stored in another storage unit managed by the third party without storing it in the storage unit 1210.

A series of processes realized by the transfer with the contract starting process 3220, the commodity list sending process 3110, the negotiating ID sending process 3120, and the contract content describing process sending process 3150 are the process of sending the contract content describing process 3230 of describing the data in the contract content 2160 to be described below from the covenanter system 1100 to the covenantee system 1200 and executing the process in the

covenantee system 1200.

A series of processes realized by the transfer with the contract content describing process 3230 and the contract content sending process 3160 is a process of describing the contract content 2160 in an electronic contract document.

A series of processes realized by the transfer with the contract data creation signing process 3240 and the contract data signing process 3170 is a process of writing an electronic signature on the contract content 2160 to be described below, the information for specifying all or part of the description data 2150 concerning the contract content 2160, and the information for specifying the contract content describing process 3230 used for the description and storing the resulting data in the covenanter system 1100 and the covenantee system 1200.

The description data receiving process 3210 will be described with reference to the flowchart of Fig. 3.

At a processing step 13010, the data for indicating the request for the commodity list 4110 is sent to the covenanter system 1100 (commodity list sending process 3110). That is, the commodity list 12310 is requested to the covenanter by the covenantee. The processing step 13010 corresponds to an arrow 12310 shown in Fig. 2. Then, at a processing step 13020, the commodity list 4110 is received from the covenanter

system 1100 (commodity list sending process 3110). That is, the covenanter presents the commodity list 4110 to the covenantee. This processing step 13020 corresponds to an arrow 12320 in Fig. 2. A box described in the upper portion of each arrow in Fig. 2 indicates the data to be sent by the arrow.

As shown in Fig. 11, it is preferable that the commodity list 4110 is a table for managing the combination of the commodity ID 2130 and the commodity information 2135. The commodity ID 2130 displays a function of specifying the commodity. It is an identifier (symbol) allocated to each commodity. Each commodity has the corresponding value of the identifier. For example, it is a number, some alphabets, a combination of them, a title of a commodity, or its acronym. The commodity information 2135 is the information about the commodity. Fig. 11 shows an example of the used car sales. Hence, the commodity information 2135 is the information on the type, the model year, and the price of a car.

Then, at a processing step 13030, the commodity list 4110 is outputted by the output unit 1250 of the covenantee system 1200. At a processing step 13040, the input unit 1240 included in the covenantee system 1200 is served to accept the commodity ID 2130 as the selected information of the commodity from the covenantee. At a processing step 13050, the covenantee ID 2220 stored in the storage

unit 1210 included in the covenantee system 1200 and the commodity ID 2130 accepted at the processing step 13040 are sent to the covenanter system 1100 (negotiating ID sending process 3120). That is, the operation is executed to present the commodity ID 2130 from the covenantee to the covenanter and then request the negotiating ID. The covenantee ID 2220 displays a function of specifying the covenantee. It is an identifier (symbol) allocated to each covenantee. For example, it may be a number, some alphabets, a combination of them, a title of a covenantee, or its acronym. The processing step 13050 corresponds to an arrow 12330 in Fig. 2.

At a processing step 13060, the covenanter system 1100 (negotiating ID sending process 3120) serves to send the negotiating ID 2140. That is, the operation is executed to present the negotiating ID 2140 from the covenanter to the covenantee. This processing step 13060 corresponds to an arrow 12340 in Fig. 2. As shown in Fig. 19, the negotiating ID 2140 is an identifier (symbol) determined by the combination of the covenanter ID 2120, the covenantee ID 2220 and the commodity ID 2130. For example, it may be a number, some alphabets, or a combination of them. If, however, the covenanter is limited, it is preferable that the negotiating ID 2140 is determined by the combination of the covenantee ID 2220 and the commodity ID 2130. If the commodity is limited, it is preferable

that the negotiating ID 2140 is determined by the combination of the covenanter ID 2120 and the commodity ID 2130. If the commodity is limited, it is preferable that the negotiating ID 2140 is determined by the combination of the covenanter ID 2120 and the covenantee ID 2220. The covenanter ID 2120 displays the function of specifying the covenanter and is an identifier (symbol) allocated to each covenanter. For example, it may be a number, some alphabets, a combination of them, a name of a covenanter, or its acronym. The negotiating ID 2140 makes it possible to specify a commodity, a covenanter and a covenantee to be negotiated.

At the processing step 13070, the operation is executed to receive an input of the description request content 2230 from the covenantee through the use of the input unit 1240 included in the covenantee system 1200. The description request content 2230 is integrally composed of a type 2231 and a main body 2232. The type 2231 is the data for specifying what type of the data the main body 2232 is. For example, it is the character string data, the speech data, or the moving picture data. Further, it also indicates which system is used for digitizing the data. The main body 2232 stores the concrete content of the description request as the character string data, the speech data, the moving picture data and the picture data. The description request content 2230 stores the data

for specifying the input media as the type 2231 and the actual data in the main body 2232. Fig. 15 shows the example containing a question to an exterior of a car. The description request content 2230 may contain the negotiating request such as price cutting except the description request.

At a processing step 13080, the negotiating ID 2140 and the description request content 2230 are sent to the covenanter system 1100 (description data sending process 3130). That is, the operation is executed to allow the covenantee to present the negotiating ID 2140 and the description request content 2230 to the covenanter. This processing step 13080 corresponds to an arrow 12350 in Fig. 2. At a processing step 13090, the operation is executed to receive the description data 2150 from the covenanter system 1100. That is, the covenanter presents the description response content to the covenantee.

As shown in Fig. 15, the description data 2150 is composed of the description request content 2230 presented to the covenanter by the covenantee, the description response content 2151 presented to the covenantee by the covenanter, a covenanter signature 2152, and a covenantee signature 2153. The description response content 2151 is the data containing the response to the description request content 2230. The description response content 2151 is inserted into the description data 2150 by the description data sending

process 3130 to be described below. The data structure of the description response content 2151 is the same as the data structure of the description request content 2230. In addition, the description data 2150 may contain the description request content 2230 and the description response content 2151 or only the description request content 2230 or only the description response content 2151. Further, the description data 2150 may contain both the covenanter signature 2152 and the covenantee signature 2153 or only the covenanter signature 2152 or only the covenantee signature 2153. In some cases, the covenanter may present the description request content 2230 to the covenantee and the covenantee presents the description response content 2151 to the covenanter. Fig. 15 shows an example containing a response to a question on the exterior of a car. The covenanter signature 2152 is given to both the description request content 2230 and the description response content 2150. The covenanter signature 2152 is inserted by the description data sending process 3130 to be described below. The covenantee signature 2153 is given to both the description request content 2230 and the description response content 2150. The covenantee signature 2153 is inserted at the following processing step 13100.

At the step 13100, a signature is written to the description request content 2230 and the description response content 2150 through the use of the

secret key 2210 stored in the storage unit 1210 included in the covenantee system 1200 and then is given to the description data 2150. The method of writing a signature is executed to calculate the hashes of the description request content 2230 and the description response content 2150 and encrypt the calculated hashes with the secret key 2210. Herein, the hash means a data string having a fixed length created from a given original text. The hash is characterized in that it is quite difficult to create another message for creating the same hash value.

At a processing step 13110, the description data 2150 and the negotiating ID 2140 are stored in the description data storage area 5110 included in the storage area 1210 of the covenantee system 1200. As shown in Fig. 14, it is preferable that the description data storage area 5110 is a table for managing a combination of the negotiating ID 2140 and the storage area of the description data 2150.

At a processing step 13120, the negotiating ID 2140 and the description data 2150 are sent to the covenanter system 1100 (description data receipt checking process 3140). That is, the operation is executed to allow the covenantee to present the negotiating ID 2140 and the description data 2150 to the covenanter. This processing step 13120 corresponds to an arrow 12370 in Fig. 2.

At a processing step 13130, the description

response content 2151 is outputted to the output unit 1250 included in the covenantee system 1200. Concretely, according to the type 2231 of the description response content 2151, the output unit 1250 operates to output the main body 2232 of the description response content 2151 as a character string, speech and a moving picture.

At a processing step 13140, the operation is executed to receive an input as to whether or not another kind of description data 2150 is newly received through the use of the input unit 1240 of the covenantee system 1200. At a processing step 13150, if the input indicates the data is newly received at the processing step 13140, the processing flow is passed to the processing step 13010. At a processing step 13150, if the input at the processing step 13140 indicates that the data is not received again, the description data receiving process 3210 is terminated.

In the covenantee system 1200, it is preferable to determine if the signature 2152 of the covenanter given to the description data 2150 is correct. Then, if the covenanter signature 2152 is determined to be correct in the covenantee system 1200, it is preferable that the covenantee signature 2153 is given to the description data 2150. Further, if the covenanter signature 2152 is determined to be incorrect in the covenantee system 1200 (containing the case that the covenanter signature 2152 is not given thereto),

the determined result is outputted to at least one of the output unit 1150 of the covenanter system 1100 and the output unit 1250 of the covenantee system 1200. That is, it is preferable to notify at least one of the covenanter and the covenantee of the incorrectness of the covenanter signature 2152. If the covenanter signature 2152 is determined to be correct, the determined result may be outputted to at least one of the output unit 1150 of the covenanter system 1100 and the output unit 1250 of the covenantee system 1200.

In the covenanter system 1100, it is preferable that the covenantee signature 2153 attached to the description data 2150 determines if it is correct. If the covenantee signature 2153 is determined to be incorrect in the covenanter system 1100 (containing the case that the covenantee signature 2153 is not attached thereto), it is preferable that the determined result is outputted to at least one of the output unit 1150 of the covenanter system 1100 and the output unit 1250 of the covenantee system 1200. That is, it is preferable to notify at least one of the covenanter and the covenantee of the incorrectness of the covenantee signature 2153. If the covenantee signature 2153 is determined to be correct in the covenanter system 1100, the determined result may be outputted to at least one of the output unit 1150 of the covenanter system 1100 and the output unit 1250 of the covenantee system 1200.

The commodity list sending process 3110 will

be described with reference to Fig. 2. The commodity list sending process is executed to receive a request for the commodity list 4110 from the covenantee system 1200 (arrow 12310 or 12380), call the commodity list 4110 stored in the storage unit 1110 of the covenanter system 1100, and then send the called commodity list 4110 to the covenantee system 1200 (arrow 12320 or 12390).

The negotiating ID sending process 3120 will be described with reference to Fig. 2. The negotiating ID sending process is executed to receive the commodity ID 2130 and the covenantee ID 2220 from the covenantee system 1200 (arrow 12330 or 12400), combine the covenantee ID 2220 and the commodity ID 2130 and the covenanter ID 2120 stored in the storage unit 1110 of the covenanter system 1100 for generating the negotiating ID 2140 shown in Fig. 19, and then send the generated negotiating ID 2140 to the covenantee system 1200 (arrow 12340 or 12410).

The description data sending process 3130 will be described with reference to the flowchart of Fig. 4.

At a processing step 14010, the operation is executed to receive the negotiating ID 2140 and the description request content 2230 from the covenantee system 1200. This processing step 14010 corresponds to the arrow 12350 shown in Fig. 2. At a processing step 14020, the operation is executed to output the descrip-

tion request content 2230 through the use of the output unit 1150 of the covenanter system 1100. The output of the description request content 2230 is the same manner as the output of the description content 2151 at the processing step 13130 of the description data receiving process 3210.

At a processing step 14030, the operation is executed to receive an input of the description response content 2151 from the covenanter through the use of the input unit 1140 of the covenanter system 1100. The description response content 2151 is inputted in a similar manner to the description request content 2230 at the processing step 13070 of the description data receiving process 3210. At the processing step 14040, the operation is executed to generate the description data 2150 (shown in Fig. 15) having the description request content 2230 and the description response content 2151 built therein.

At a processing step 14050, the operation is executed to write a signature on the description request content 2230 and the description response content 2151 through the secret key 2110 stored in the storage unit 1110 of the covenanter system 1100 and then attach it to the description data 2150. At a processing step 14060, the description data 2150 is sent to the covenantee system 1200. This processing step 14060 corresponds to the arrow 12360 in Fig. 2.

The description data receipt checking process

3140 will be described with reference to Fig. 2. The description data receipt checking process 3140 is executed to receive the negotiating ID 2140 and the description data 2150 from the covenantee system 1200 (arrow 12370), combine both of the received data as a pair, and then store the pair in the description data storage area 5110 of the storage unit 1110 included in the covenanter system 1100.

The contract staring process 3220 will be described with reference to the flowchart of Fig. 5. At a processing step 15010, the request for the commodity list 4110 is sent to the covenanter system 1100 (the commodity list sending process 3110). That is, the covenantee requests the commodity list 4110 of the covenantee. This processing step 15010 corresponds to the arrow 12380 in Fig. 2. At a processing step 15020, the commodity list 4110 is received from the covenanter system 1100 (commodity list sending process 3110). This processing step 15020 corresponds to the arrow 12390 in Fig. 5.

At a processing step 15030, the content of the commodity list 4110 is outputted by the output unit 1250 of the covenantee system 1200. At a processing step 15040, the operation is executed to receive an input of the commodity ID 2130 as the selecting information of the commodity from the covenantee. At a processing step 15050, the operation is executed to send the covenantee ID 2220 stored in the storage unit

1210 of the covenantee system 1200 and the commodity ID 2130 received at the processing step 15040 to the covenanter system 1100 (negotiating ID sending process 3120). That is, the covenantee requests the negotiating ID of the covenanter. This processing step 15050 corresponds to the arrow 12400 in Fig. 2.

At a processing step 15060, the negotiating ID 2140 is received from the covenanter system 1100 (negotiating ID sending process 3120). This processing step 15060 corresponds to the arrow 12410 shown in Fig. 2. At a processing step 15070, the commodity ID 2130 is sent to the covenanter system 1100 (contract content describing process sending process 3150). That is, the covenantee requests the contract content describing process 3230 of the covenanter. This processing step 15070 corresponds to the arrow 12420 in Fig. 2.

At a processing step 15080, the operation is executed to receive the contract content describing process 3230 and the signature 2180 for the contract content describing process from the covenanter system 1100. This processing step 15080 corresponds to the arrow 12430 in Fig. 2. At a processing step 15090, it is verified if the signature 2190 for the contract content describing process is a correct one for the contract content describing process 3230 done by the covenanter system 1100. If it is correct, that is, the signature is the covenanter one, the operation at the processing step 15100 is executed. If it is not

correct, that is, the signature 2180 is not the covenanter one, the contract starting process 3220 is terminated. The method of verifying the signature is executed to compare the hash value of the contract content describing process 3230 with the value of the signature 2190 for the contract content describing process 3230 decoded by the public key 2170 of the covenanter stored in the storage unit 1210 of the covenantee system 1200, and if the hash value is equal to the decoded value, determine that the signature is correct or if the hash value is not equal to the decoded value, determine that the signature is incorrect.

At a processing step 15100, the negotiating ID 2140 and the commodity ID 2130 are sent to the contract content describing process 3230 through the contract data creation signing process 3240. This processing step 15100 corresponds to the arrow 12510 in Fig. 2. At a processing step 15110, the contract describing process 3230 is executed by the processing unit 1230 included in the covenantee system 1200. At a processing step 15120, the negotiating ID 2140 is sent to the contract describing process 3230. This processing step 15120 corresponds to the arrow 12520 in Fig. 2.

In turn, the description will be oriented to the contract content describing process sending process 3150 with reference to Fig. 6. At a processing step

29010, the commodity ID 2130 is received from the covenantee system 1200. This processing step 29010 corresponds to the arrow 12420 in Fig. 2. At a processing step 29020, the operation is executed to retrieve the corresponding contract content describing process 3230 to the commodity ID 29010 received at the processing step 29010 and then pick it up.

As shown in Fig. 13, it is preferable that the contract content describing process list 4130 is a table for managing a combination of the commodity ID 2130 and the contract content describing process 3230. The contract content describing process 3230 registered in the contract content describing process list 4130 is a processing program used for describing the contract content 2160 of the commodity indicated in the commodity ID 2130 paired therewith on an electronic contract document. For example, if the commodity ID 2130 indicates a used car, the contract content describing process 3230 paired with the commodity ID 2130 is a processing program used for describing the contract content 2160 about the used car on the electronic contract document. For example, if the commodity ID 2130 indicates a commercial paper (CP), the contract content describing process 3230 paired with the commodity ID 2130 is a processing program used for describing the contract content 2160 about the CP.

At a processing step 29030, the hash value of the contract content describing process 3230 is

calculated by using the secret key 2110 stored in the storage unit 1110 of the covenanter system 1100. This hash value corresponds to the signature 2180 for the contract content describing process. At a processing step 29040, the contract content describing process 3230 and the signature 2180 therefor are sent to the covenanter system 1100. This processing step 29040 corresponds to the arrow 12430 in Fig. 2.

The contract content describing process 3230 will be described with reference to the flowchart of Fig. 7.

At a processing step 16010, the commodity ID 2130 is received from the covenanter system 1100. In place of the commodity ID, the negotiating ID may be used. This processing step 16010 corresponds to the arrow 12520 in Fig. 2. At a processing step 16020, the commodity ID 2130 is sent to the covenanter system 1100 (contract content sending process 3160). That is, the covenantee requests the contract content 2160 of the covenanter. This processing step 16020 corresponds to the arrow 12440 in Fig. 2. At a processing step 16030, the contract content 2160 is received from the covenanter system 1100 (contract content sending process 3160).

As shown in Fig. 17, it is preferable that the contract content 2160 is a table for managing a combination of an item name 2161, a describer 2162 and a value 2163. The item name 2161 indicates the content

of the information the corresponding value 2163 represents. The describer 2162 indicates a subject which describes the corresponding value 2163. The describer 2162 enters an input in the covenanter system 1100 if the value indicates the covenanter, while the describer 2162 enters an input in the covenantee system 1200 if the value indicates the covenantee. If it is blank, it means a predetermined value in which case no input is entered. Fig. 17 shows the contract content 2160 in the contract of dealing a used car. The contract content 2160 is composed of a table for managing a combination of a contract type 26010, a contract date 26020, a seller information 26030, a sale car information 26040, a buyer information 26050, an interest rate 26060, a payment method 26070, a sale price 26080, and a paying price 26090. The value 2163 given if the covenanter is given in the blank of the describer 2162 of the contract content 2160 received at the processing step 16030 has been already entered by the contract content sending process 2160 to be described below. Fig. 18 shows the contract content 2160 in the security, that is, the CP. The contract content 2160 may be used for an electronic contract as well as an electronic sale of securities merely by changing the item name 2161.

At a processing step 16050, an operation is executed to receive an input of the buyer information 26050 of the contract content 2160 and the value 2163

for the payment method 26070 from the covenantee through the use of the input unit 1240 of the covenantee system 1200. At a processing step 16060, the value 2163 of the paying price 26090 is calculated by using the sale price 26080, the interest rate 26060 and the value 2163 for the payment method 26070. The method for calculating the paying price 26090 is likewise to the conventional method for calculating the interest rate. Hence, the detailed description thereabout will be left out. At a processing step 16070, the contract content 2160 is sent to the contract data creation signing process 3240 included in the covenantee system. This processing step 16070 corresponds to the arrow 12530 in Fig. 2.

The contract content sending process 3160 will be described with reference to the flowchart of Fig. 8.

At a processing step 17010, the commodity ID 2130 is received from the covenantee system 1200. In place of the commodity ID, the negotiating ID may be used. This processing step 17010 corresponds to the arrow 12440 in Fig. 2. At a processing step 17020, the operation is executed to retrieve the corresponding contract content 2160 from the contract content list 4120 stored in the storage unit 1110 of the covenanter system 1100 with the received commodity ID 2130 as a key. As shown in Fig. 12, it is preferable that the contract content list 4120 is a table for managing a

combination of the commodity ID 2130 and the contract content 2160. As such, by retrieving the stored commodity ID 2130 that is equal to the received commodity ID 2130, it is possible to retrieve the corresponding contract content 2160 to the received commodity ID 2130. In place of the commodity ID, the negotiating ID may be used.

At a processing step 17030, the contract content 2160 is outputted through the use of the output unit 1150 of the covenanter system 1100. At a processing step 17040, the input unit 1140 of the covenanter system 1100 serves to receive the inputs of the contract date 26020, the seller information 26030, the sale car information 26040, the interest rate 26060, and the value 2163 of the sale price 26080 belonging to the contract content 2160 shown in Fig. 17, which are given by the covenanter. At a processing step 17050, the contract content 2160 is sent to the covenantee system 1200. This processing step 17050 corresponds to the arrow 12450 in Fig. 2.

The contract data creation signing process 3240 will be described with the flowchart of Fig. 9.

At a processing step 18010, the operation is executed to receive the negotiating ID 2140, the commodity ID 2130 and the contract content describing process 3230 from the covenanter system 1100. This processing step 18010 corresponds to the arrow 12510 in Fig. 2. At a processing step 18020, the contract

content 2160 is received from the contract content describing process 3230. This processing step 18020 corresponds to the arrow 12530 in Fig. 2. At a processing step 18030, the operation is executed to generate the contract data 2240 having the contract content 2160 received at the processing step 18020.

As shown in Fig. 16, it is preferable that the contract data 2240 is composed of the contract content 2160, the description data hash value 2159, the signature 2185 for the contract content describing process, the covenanter signature 2241, and the covenantee signature 2242. The hash value 2159 of the description data built in the contract data 2240 may be singular or plural or removed. The details of each data item contained in the contract data 2240 will be described when each data item is operated with reference to the flowchart of Fig. 9.

At a processing step 18040, it is determined whether or not there exists the negotiating ID 2140 matching to the negotiating ID 2140 received at the processing step 18010 and the description data 2150 excluded in the contract data 2240 is located in the description data storage area 5110 stored in the storage unit 1210 of the covenantee system 1200. As a result of the determination, if yes, the description data 2150 is retrieved. Then, the operation at a processing step 18050 is executed. If not, the operation at a processing step 18060 is executed.

At the processing step 18050, the operation is executed to calculate the hash value 2159 of the description data that corresponds to the hash of the description data 2150 retrieved at the processing step 18040 and to incorporate the hash value 2159 in the contract data 2240. With the hash value 2159 of this description data, the contract data is matched to the description data about the contract data. In place of the hash value 2159, the negotiating ID or another identifier may be used for matching the contract data to the description data. That is, the hash value 2159, the negotiating ID and another identifier are used as the specifying data for specifying the corresponding description data to the contract data. If the specifying data is contained in the contract data, the contract data and the description data may be saved differently. In particular, if two or more items of description data are given for one contract data item, the amount of information of the contract data may be effectively reduced. Further, at the processing step 18050, by building the description data 2150 itself in the contract data without building the hash value 2159 of the description data 2150, the contract data may be directly matched to the description data. Further, the specifying data may be built in the description data. The operation for matching the description data to the contract data may be executed by the processing unit 1130 of the covenanter system 1100. Upon termination

of the processing step 18050, the operation at the processing step 18040 is executed again.

At a processing step 18060, the operation is executed to calculate the hash value 2185 of the contract content describing process that corresponds to the hash of the contract content describing process 3230 received at the processing step 18010 and then build the hash value 2185 into the contract data 2240. With the hash value 2185 of this contract content describing process, the contract data in which the contract content is described and the describing program used for describing the contract content on the contract document are managed as corresponding the contract data with the describing program. At the processing step 18060, without building the hash value 2185 of the contract content describing process 3230, the contract content describing process 3230 itself may be incorporated in the contract data 2240 in a manner to correspond the contract data with the describing program.

At a processing step 18070, the negotiating ID 2140, the commodity ID 2130 and the contract data 2240 are sent to the covenanter system 1100 (contract data signing process 3170). That is, the covenantee requests addition of the covenanter signature 2241 to the contract data 2240 of the covenanter. The processing step 18070 corresponds to the arrow 12460 in Fig. 2. At a processing step 18080, the contract data 2240

is received from the covenanter system 1100 (contract data signing process 3170). This processing step 18080 corresponds to the arrow 12470 in Fig. 2.

At a processing step 18090, it is determined if the covenanter signature 2241 is a correct signature given by the covenanter system 1100 and the contract content 2160 of the contract data 2240, the hash value 2159 of the description data and the hash value 2185 of the contract content describing process are not changed after they are sent at the processing step 18070. If it is determined that the signature is correct and no change is given, the operation at a processing step 18100 is executed. If it is determined that the signature is not correct and any change is given, the contract data creation signing process is terminated.

At the processing step 18100, with the secret key 2210 stored in the storage unit 1210 of the covenantee system 1200, the covenantee signature 2242 is added to the contract data. In addition, it is preferable that the covenantee signature 2242 is given to the contract content 2160 contained in the contract data 2240, the hash value 2159 of all the description data, and the hash value 2185 of the contract content describing process.

At a processing step 18110, the negotiating ID 2140 and the contract data 2240 are stored in the contract data storage area 5120 secured in the storage area 1210 of the covenantee system 1200. As shown in

Fig. 31, it is preferable that the contract data storage area 5120 is a table for managing a combination of the negotiating ID 2140 and the storage area of the contract data 2240. At a processing step 18120, the contract data 2240 is sent to the covenanter system 1100 (contract data receiving process 3180). This processing step 18120 corresponds to the arrow 12480 in Fig. 2.

The contract data signing process 3170 will be described with reference to the flowchart of Fig. 10.

At a processing step 19010, the negotiating ID 2140, the commodity ID 2130 and the contract data 2240 are received from the covenantee system 1200. This processing step 19010 corresponds to the arrow 12460 in Fig. 2. At a processing step 19020, it is determined if there exists the description data 2150 paired with the negotiating ID 2140 matched to the negotiating ID 2140 received at the processing step 19010 in the description data storage area 5110 secured in the storage unit 1110 of the covenanter system 1100 and not being compared at a processing step 19040 to be described below. If yes, the description data 2150 is retrieved and then the operation at the processing step 19030 is executed. If not, the operation at the processing step 19050 is executed.

At a processing step 19030, the operation is executed to calculate a hash value of the description

data 2150 retrieved at the processing step 19020. At a processing step 19040, it is determined if the hash value 2159 of the description data matched to the hash value calculated at the step 19030 is located in the contract data 2240. If yes, the operation at the processing step 19020 is executed. If not, the operation at a processing step 19090 is executed. In a case that not the hash value 2159 of the description data but the description data 2150 itself is incorporated in the contract data at the processing step 18050 of the contract data creation signing process 3240 shown in Fig. 9, it is determined if the description data 2150 retrieved at the processing step 19020 is located in the contract data 2240.

At a processing step 19050, it is determined if the hash value 2159 of the description data that is not compared at the step 19040 is located in the contract data 2240. If yes, the operation at a processing step 19090 is executed. If not, the operation at a processing step 19060 is executed. Also at the step 19050, like the step 19040, if the description data 2150 itself is incorporated in the contract data 2240, it is determined if the description data 2150 that is not compared is located in the contract data 2240.

At a processing step 19060, the operation is executed to retrieve the contract content describing process 3230 paired with the commodity ID 2130 from the

contract content describing process list 4130 stored in the storage unit 1110 of the covenanter system 1100 with the commodity ID 2130 received at the step 19010 as a key and then calculate a hash value of the process 3230. In place of the commodity ID, the negotiating ID may be used. At a processing step 19070, the hash value calculated at the step 19060 is compared with the hash value 2185 of the contract content describing process in the contract data 2240. If matched, the operation at a processing step 19080 is executed. At the step 18070 of the contract data creation signing process shown in Fig. 9, if not the hash value of the contract content describing process but the contract content describing process 3230 is directly incorporated, the contract content describing process 3230 retrieved at the step 19060 is compared with the contract content describing process 3230 in the contract data 2240.

At a processing step 19080, with the secret key 2110 stored in the storage unit 1110 of the covenanter system 1100, the covenanter signature 2241 is added to the contract data. The covenanter signature 2241 should be added to the contract content 2160 contained in the contract data 2240, the hash value 2159 of all the description data and the hash value 2185 of the contract content describing process. At a processing step 19090, the contract data is sent to the covenantee system 1200. This processing step 19090

corresponds to the arrow 12470 in Fig. 2.

The contract data receiving process 3180 will be described with reference to Fig. 2. The contract data receiving process 3180 is executed to store the negotiating ID 2140 and the contract data 2240 in the contract data storage area 5120 secured in the storage unit 1110 of the covenanter system 1100 when the contract data 2240 is received from the covenantee system 1200 (arrow 12480). Alternatively, the contract data receiving process 3180 is executed to the negotiating ID 2140 and the contract data 2240 on the storage medium to be supplied to the covenantee when the contract data 2240 is received from the covenantee system 1200 (arrow 12480).

The description will be oriented to the verifying system 1400 and the verifying process 3310 to be executed therein with reference to Fig. 29. The verifying system 1400 is a processing unit that operates to verify if the contract data 2240 is interpolated and output the content if not interpolated. Herein, the verifying system 1400 and the verifying process 3310 should be installed neutrally by a third party (for example, the court of law) to the covenanter and the covenantee. At first, the system arrangement of the verifying system 1400 will be described.

The verifying system 1400 includes a storage unit 1410, a communication unit 1420, a processing unit 1430, an input unit 1440, and an output unit 1450, all

of which are connected through a bus 1460. The storage unit 1410, the communication unit 1420, the processing unit 1430, the input unit 1440, the output unit 1450 and the bus 1460 provide the same capabilities as the storage unit 1110, the communication unit 1120, the processing unit 1130, the input unit 1140, the output unit 1150 and the bus 1160 of the covenanter system 1100, respectively. The processing unit 1420 is connected with a network 1300 so that the processing unit 1420 may transfer the data with the covenanter system 1100 or the covenantee system 1200. The storage unit 1410 stores the covenanter's public key 2170, the covenantee's public key 2270 and the verifying process 3310 and has a description data storage area 5110 and a contract data storage area 5120.

The verifying process 3310 will be described with reference to Fig. 30. At a processing step 30010, the negotiating ID 2140 of the contract data 2240 to be verified is received from the outside. If the term "negotiating ID 2140" appears in the following description, it indicates the negotiating ID 2140 received at this step 30010.

At a processing step 30020, the operation is executed to request the contract data 2240 having the matched negotiating ID 2140 of the covenanter system 1100 and then store it in the contract data storage area 5120 of the verifying system 1400. In receipt of the request from the verifying system 1400, the

covenanter system 1100 operates to retrieve the contract data 2240 having the same combination of values as the requested negotiating ID 2140 from the contract data storage area 5120 of the covenanter system 1100 and then send it back to the verifying system 1400. If the term "contract data storage area 5120" solely appears in the following description, it indicates the contract data storage area 5120 of the verifying system 1400. At this step, the verifying system 1400 may request the contract data 2240 of not the covenanter system 1100 but the covenantee system 1200.

At a processing step 30025, the operation is executed to request all the description data 2150 having the matched negotiating ID 2140 of the covenanter system 100 and then store the description data 2150 in the description data storage area 5110 of the verifying system 1400. In receipt of the request from the verifying system 1400, the covenanter system 1100 operates to retrieve all the description data 2130 having the same combination of values as the requested negotiating ID 2140 from the description data storage area 5110 of the covenanter system 100 and then send the description data 2130 back to the verifying system 1400. If the term "description data storage area 5110" solely appears in the following description, it indicates the contract data storage area 5110 of the verifying system 1400. At this step, the verifying

system 1400 may request the description data 2150 of not the covenanter system 100 but the covenantee system 1200.

At a processing step 30030, the contract data 2240 is picked out of the contract data storage area 5110. If the term "contract data 2240" solely appears in the following description, it indicates the contract data 2240 picked out at this step.

At a processing step 30040, the loop composed of a processing step 3005 to be described below operates to determine if the unprocessed description data 2150 is left. If yes, the description data 2150 is selected and then the processing arrow is shifted to a processing step 30050. If not, the processing arrow is shifted to a processing step 30080.

At the step 30050, the operation is executed to calculate the hash value of the description data 2150 selected at the previous step. At a processing step 30060, it is determined if the hash value 2159 of the description data matched to the hash value calculated at the previous step is contained in the contract data 2240. If yes, the processing arrow is shifted to a processing step 30065. If not, the processing arrow is shifted to a processing step 30150.

At a processing step 30065, it is verified if the covenanter signature 2152 and the covenantee signature 2153 in the description data 2150 selected at the step 30040 are both correct through the use of the

covenanter's public key 2170 and the covanantee's public key 3370. If both are correct, the processing arrow is shifted to the step 30040. If not, the processing arrow is shifted to the step 30150.

At a processing step 30080, the loop composed of the processing step 3065 operates to determine if the hash value 2159 of the description data that is not compared is located in the contract data 2240. If yes, the processing arrow is shifted to the processing step 30150. If not, the processing arrow is shifted to the processing step 30090.

At the step 30090, the operation is executed to request the contract content describing process 3230 having the matched commodity ID 2130 in the negotiating ID 2140 of the covenanter system 1100 and then store it in the storage unit 1420. Further, in receipt of the request from the verifying system 1400, the covenanter system 1100 operates to retrieve the contract content describing process 3230 having the same combination of values as the requested commodity ID 2130 from the contract content describing process list 4130 and then send it back to the covenanter system 1100. If the term "contract content describing process 3230" solely appears in the following description, it indicates the contract content describing process 3230 stored in the storage unit 1420.

At a processing step 30095, the operation is executed to calculate a hash value of the contract

content describing process 3230. At a processing step 30100, it is determined if the hash value calculated at the previous step is matched to the hash value 2185 of the contract content describing process in the contract data. If matched, the processing arrow is shifted to the processing step 30105. If not matched, the processing arrow is shifted to the step 30150.

At the step 30105, the operation is executed to verify if the covenanter signature 2241 and the covenantee signature 2242 added to the contract data 2240 are both correct through the use of the public key 2170 of the covenanter and the public key 2270 of the covenantee. If both are correct, the processing arrow is shifted to a processing step 30110. If not, the processing arrow is shifted to the step 30150.

At the step 30110, the message that the contract data 2240 is valid is outputted. The output is, for example, a character string indicating that "the contract data is effective". At a processing step 30115, the contract content 2160 in the contract data 2240 is outputted.

At a processing step 30120, the loop composed of a processing step 30130 operates to retrieve the unprocessed description data 2150 from the description data storage area 5110 and then output the description content 2151 of the description data 2150. Like the output of the description content 2151, the description content 2151 is outputted so that the main body 2232 is

outputted as a character string, a picture, speech and a moving picture according to the type 2231 at the step 13130 of the description data receiving process 3210. At the step 30130, it is determined if the output of all the description data 2150 stored in the description data storage area 5110 is terminated. If terminated, the processing arrow is shifted to a processing step 30140. If not, the arrow is shifted to the step 30120.

At the step 30140, the contract content describing process 3230 is outputted and the verifying process 3310 is terminated. The output of the contract content describing process 3230 is a program list of the contract content describing process 3230, for example. At a processing step 30150, a message that the contract data 2240 is invalid is outputted and then the verifying process 3310 is terminated. The output is a character string that "the contract data is invalid", for example.

The signatures of both or either of the concerned parties added to the description data may be made to correspond with the signatures of both or either of the parties added to the contract data when managing the data. This makes it possible to verify the person who presents the description content. For example, the signature of the covenanter added to the description data is compared with the signature of the covenanter added to the contract data. If both has a given correspondence, it proves that the covenanter

creates or agrees with the description content.

It is possible to execute the transfer of the description content between the covenantee system 1200 and the covenanter system 1100 and allow the covenanter system 1100 to conclude the contract. In this case, the covenantee system 1200 executes the description data receiving process 3210, while the covenanter system 1100 executes the commodity list sending process 3110, the negotiating ID sending process 3120, the description data sending process 3130, the description data receipt checking process 3140, the contract content description process sending process 3150, the contract content sending process 3220, the contract content describing process 3230, and the contract data creation signing process 3240. For example, when the covenanter and the covenantee allow their systems (covenanter system 1100 and covenantee system 1200) to transfer the description content through the network 1300 and make a contract, the covenantee comes to the covenanter's shop in which he or she uses the covenanter system 1100 for concluding the contract. The person who enters the contract content to the covenanter system 1100 may be only the covenanter but also both of the covenanter and the covenantee. Further, the description data saved in the covenantee system 1200 may be taken in the covenanter system 1100 when the contract is made.

Hereafter, the first embodiment of the

invention will be summarized. At the preliminary stage of the contract, the description content such as a question or a request about a target commodity, its response, and the negotiating content to be transferred between the covenanter system 1100 and the covenantee system 1200 is saved as the description data 2150 in the covenanter system 1100 and the covenantee system 1200. At the stage of the contract, all or part of the description data 2150 about the contract content 2160 is made to correspond with the contract data 2240. Further, the contract content describing process 3230 for describing the contract content is made to correspond with the contract data 2240. Further, the covenanter system 1100 and the covenantee system 1200 operate to write the signatures on the description data 2150 matched to the contract data 2240 and the contract content describing process 3230 and then save the contract data 2240 in both systems.

A program, which enables both or either of the covenanter system 1100 (processing unit 1130) and the covenantee system 1200 (processing unit 1230) to execute both or either of the process 12100 to be done by the covenantee system 1200 and the process 12200 to be done by the covenanter system 1100, is stored in a storage medium (for example, a floppy disk, a harddisk, a memory card, a memory stick, a magneto-optical disk, a CD-ROM, a CD-R/RW, a DVD-ROM, a DVD-RAM, and a server) and then is supplied to both or either of the

covenanter and the covenantee. Alternatively, the recording medium in which the program for enabling the covenantee system 1200 (processing unit 1230) to execute the process 12100 to be done by the covenantee system 1200 may be supplied from the covenanter to the covenantee.

Further, a program, which enables both or either of the covenanter system 1200 (processing unit 1130) and the covenantee system 1200 (processing unit 1230) to execute both or either of the process 12100 to be done by the covenantee system 1200 and the process 12200 to be done by the covenanter system 1100, may be supplied to both or either of the covenanter and the covenantee through the network. In this case, it is preferable to take the steps of reading the program stored in the recording medium and sending the read program onto the network through the use of the program sending unit. A program, which enables the covenanter system 1200 (processing unit 1230) to execute the process 12100 to be done by the covenantee system 1200, may be supplied from the covenanter to the covenantee through the network.

According to the first embodiment of the invention, since the description content is matched to the contract content by using the inherent data in the description data, it is possible to specify the description content at the first stage of the contract and reduce the damage to one party by the other party's

breach of contract if a conflict on the contract takes place between both of the concerned parties. Hence, in a case that the contract for provision of a commodity or service is calculated through the network, it is effective to improve the safety on the contract in the electronic commerce. This may reduce the damage to the covenanter by the breach of the contract of the covenantee or the damage to the covenantee by the breach of contract of the covenanter. In particular, it is effective in the case that the description content is not reflected on the contract content.

Moreover, according to the first embodiment of the invention, by adding the signatures of both or either of the concerned parties to the description content, it is possible to prevent the description content from being interpolated by both or either of the concerned parties or the third party, which is effective in improving the safety on the contract.

Moreover, according to the first embodiment of the invention, both of the concerned parties manage the description content and the contract content as matching the former to the latter, respectively, or the just third party matches the description content to the contract content. This is effective in improving the credibility as a physical evidence of the description content.

Moreover, according to the first embodiment of the invention, for matching the contract content to

the describing program through the use of the inherent data in the describing program (for example, the describing program itself or the hash value of the describing program), it is possible to specify the describing program used for describing the contract content. Further, since the signature of a creator of the describing program is added to the describing program, it is possible to specify the creator of the describing program and, if a conflict on the contract takes place between the concerned parties, verify the describing program. This is effective in preventing the describing program from being incorrectly operated, thereby improving the safety on the contract.

Hereafter, the description will be oriented to the second embodiment of the invention with reference to Figs. 20 to 31.

The system arrangement for realizing the second embodiment is illustrated in Fig. 20. The difference between the system arrangement of the second embodiment and that of the first embodiment is provision of a contract content display template list 4140 in the storage unit 1110 of the covenanter system 1100. The details of the contract content display template list 4140 will be discussed below.

Fig. 21 shows the data to be transferred between the processes to be executed by the covenanter system 1100 and the covenantee system 1200. The difference from the first embodiment shown in Fig. 2 is

a reply of not only the contract content 2160 but a contract content display template in the case of the reply from the contract content sending process 3160 to the contract content describing process 3230 (arrow 12450). The details of the contract content display template 2190 will be discussed below. In the case of the reply from the contract content describing process 3230 to the contract data creation signing process 3240 (arrow 12530), not only the contract content 2160 but the contract content display template 2190 are given back to the process 3240.

In the second embodiment, the processes except the contract content describing process 3230, the contract content sending process 3160, the contract data creation signing process 3240 and the contract data signing process 3170 are the same as those of the first embodiment. Hereafter, those four processes will be described in detail.

The contract content describing process 3230 will be described with reference to the flowchart of Fig. 22. The difference from the contract content describing process 3230 of the first embodiment shown in Fig. 7 is changes of the processing step 16020 into a processing step 32020, the processing step 16030 into a processing step 32030, and the processing step 16070 into a processing step 32070. The content of the change is that the data sent or received at each processing step includes the contract content display

template 2190 in addition to the contract content 2160.

The contract content sending process 3160 will be described with reference to the flowchart of Fig. 23. The difference from the contract content sending process 3160 of the first embodiment shown in Fig. 8 is a change of the processing step 17050 into a processing step 33050 and an insertion of a processing step 33045 between the processing steps 17040 and 33050. At the step 33045, the operation is executed to retrieve the contract content display template 2190 paired with the commodity ID 2130 matched to the commodity ID 2130 received at the step 17010 from the contract content display template list 4140. As shown in Fig. 28, it is preferable that the contract content display template list is a table for managing a combination of the commodity ID 2130 and the contract content display template 2190. The difference of the processing 33050 from the processing step 17050 is as follows. At the step 17050, the data to be sent is the contract content 2160, while at the step 33050, the contract content 2160 and the contract content display template 2190 are given back.

The change point of the contract data creation signing process 3240 will be described with reference to the flowchart of Fig. 24. The difference of the process 3240 from the contract data creation singing process 3240 of the first embodiment is changes of the processing step 18020 into a processing step

34020, the processing step 18030 into a processing step 34030, the processing step 18060 into a processing step 34060, the processing step 18090 into a processing step 34090, and the processing step 18100 into a processing step 34100 and an insertion of processing steps 34022, 34024, 34026, and 34028 between the processing steps 34020 and 34030. The difference of the processing step 34020 from the processing step 18020 is as follows. At the step 18020, the data to be received is the contract content 2160, while at the step 34020, the data to be received is the contract content 2160 and the contract content display template 2190. The contract content display template 2190 is the data (or program) for converting the contract content 2160 into the contract content display data to be outputted by the output unit 1250 of the covenantee system 1200. For example, the contract content display data is composed of a plain text represented by a series of characters. As shown in Fig. 26, the contract content display template 2190 is composed by inserting a blank 2197 in the text data 2195 consisting of a string of characters. The blank 2197 may be singular or plural. Further, an item name 2161 is allocated to the blank 2197. At the processing step 34022, the contract content display data is created from the contract content display template 2190 and the contract content 2160. This creating method is executed to retrieve a value 2163 having the item name 2161 matched to the item name 2161 allocated to the

blank 2197 from the contract content 2160 shown in Fig. 17 and then insert the retrieved value 2163 at a position where the blank 2197 inside of the contract content display template 2190 is built. At a processing step 34024, the contract content display data created at the step 34022 is outputted through the use of the output unit 1250 of the covenanter system 1200. At a processing step 24026, the operation is executed to receive an input as to whether or not the signature is given to the contract data 2240 from the covenantee through the use of the input unit 1240 of the covenantee system 1200. At a processing step 24028, if a permission of giving a signature is received at the step 24026, the operation at a processing step 34030 is executed. If the permission is not received, the contract data creation signing process 3240 is terminated. The difference of the processing step 34030 from the processing step 18030 is that at the step 34030 the first-stage contract content display data may be contained in place of the contract content 2160 of the contract data 2240. The difference of a processing step from the processing step 18060 is as follows. At the step 18060, the hash value 2185 of the contract content describing process is inserted into the contract data 2240, while at the step 34060 the contract content display template 2190 is inserted therein. As shown in Fig. 27, therefore, the contract data 2240 includes not the hash value 2185 of the

contract content describing process but the contract content display template 2190. The contract data 2240 may contain the hash value of the template 2190 in place of directly building the template 2190 into the contract data 2240. The change at the processing steps 34090 to 34100 is a respect of deleting the hash value 2185 of the contract content describing process from the objects to which the signature is given or to be verified, and adding the contract content display template 2190 to the objects.

The change point of the contract data signing process 3170 will be described with reference to the flowchart of Fig. 25. The difference of this from the contract data signing process of the first embodiment shown in Fig. 10 is changes of the processing step 19060 into a processing step 35060, the processing step 19070 into a processing step 35070, and the processing step 19080 into a processing step 35080. The difference of the processing step 35060 from the processing step 19060 is as follows. At the step 19060, the operation is executed to retrieve the contract content describing process 3230 from the contract content describing process list 4130 and calculating the hash value 2185 of the contract content describing process, while at the step 35060, the operation is executed to retrieve the contract content display template 2190 from the contract content display template list 4140 without calculating the hash value. The difference of

the processing step 35070 from the processing step 19070 is as follows. At the step 19070, the comparison is executed for the hash value 2185 of the contract content describing process, while at the step 35070, the comparison is executed for the contract content display template 2190. The difference of the processing step 35080 from the processing step 19080 is as follows. At the step 19080, the objects to which the signature is given includes the hash value 2185 of the contract content describing process, while at the step 35080, the objects include not the hash value 2185 but the contract content display template 2190.

Hereafter, the second embodiment will be summarized. The second embodiment is characterized in that the contract data creation signing process 3240 is executed to output the contract content 2160 to the outside and writing the signature on the contract data 2240 after a permission of writing the signature is received. The contract content display template 2190 used for displaying the contract content 2160 is made to be an object to be signed by the covenanter system 1100 and the covenantee system 1200 as corresponding the template 2190 to the contract data 2240. This makes it possible to prove if the contract content display template 2190 has a problem.

The second embodiment of the invention offers the following effect in addition to the effect the first embodiment involves. That is, the second embodi-

ment makes it possible to specify the contract content display template used for displaying the contract content by managing the contract content and the contract content display template as corresponding one with the other, specify the person who created the contract content display program by giving the signature of the person who created the contract content display program to the contract content display program, and verify the contract content display template if a conflict on the contract takes place between the concerned parties, thereby preventing the contract content display template from being interpolated and improving the safety on the contract.

The technical concept of this invention is not limited to the foregoing first and second embodiments of the invention.

CLAIMS:

1. A contracting method for making an electronic contract for provision of a commodity or service, comprising the steps of:

obtaining description data in which a description content presented to one concerned party is built or description specifying data for specifying said description content from the other concerned party of said contract before making said contract;

generating contract data containing said description data or said specifying data; and

prompting both or either of said concerned parties to write an electronic signature on said contract data.

2. A contracting method to be used by a covenanter for making a contract for provision of a commodity or service, comprising the steps of:

receiving a question or a request for said commodity or service from a covenantee who intends to conclude said contract through a network;

adding to a response to said question or request a covenanter's proof that said covenanter created said response;

sending said response with said covenanter's proof added thereto to said covenantee through the network;

storing said response with said covenanter's proof added thereto in at least one of storage units of

said covenanter, said covenantee, and a third party; and

if said contract is concluded between said covenanter and said covenantee, creating an electronic contract with which said response with said covenanter's proof added thereto is made to correspond.

3. A contracting method as claimed in claim 2, wherein said response with said covenanter's proof added thereto includes a covenantee's proof that said covenantee agrees with said response.

4. A contracting method to be used by a covenanter for making a contract for provision of a commodity or service, comprising the steps of:

after a question or request for said commodity or service is received from a covenantee who intends to conclude said contract, outputting a response to said question or request to an output unit of said covenantee;

after obtaining the response with an electronic signature of said covenantee added thereto from said covenanter, concluding an electronic contract between said covenanter and said covenantee about said contract;

making the response correspond with said covenantee's electronic signature added thereto with the electronic contract document on said contract by using the inherent data in said response with said covenantee's electronic signature added thereto; and

storing said electronic contract document in at least one of storage units of said covenanter and said covenantee or providing said covenantee with said electronic contract document recorded on a recording medium.

5. A contracting method as claimed in claim 4, further comprising the step of:

adding an electronic signature of said covenanter to the response to be outputted to the output unit of said covenantee.

6. A method for providing a person who accepts a commodity or service with the commodity or service, comprising the steps of:

sending a question or request for provision of said commodity or service to a provider for said commodity or service through a network;

receiving a response to said question or request from said provider through the network;

adding an electronic signature of said person who accepts said commodity or service to said response and then sending said response to said provider through the network;

storing said response with the electronic signature of said person who accepts said commodity or service added thereto in at least one of storage units of said provider, said person who accepts said commodity or service and a third party; and

if a contract for provision of said commodity

or service is concluded between said provider and said person who accepts said commodity or service, storing an electronic contract document on said contract and said response with the electronic signature of said accepter added thereto as making said electronic contract document correspond with said response.

7. A method for processing a contract to be used by at least one of concerned parties who make a contract for provision of a commodity or service and a third party, comprising the steps of:

creating a hash value of description data in which a description content about said commodity or service having been transferred between the concerned parties before concluding said contract; and

building said hash value in contract data having said contract content built therein.

8. A system for processing a contract to be used at least one of concerned parties who make a contract for provision of a commodity or service and a third party, comprising:

a processing unit for creating inherent data in description data in which a description content about a commodity or service is built, said description data having been transferred between the concerned parties about said contract before concluding said contract; and

another processing unit for corresponding contract data in which said contract content is built

with said description data by using said inherent data.

9. A system for processing a contract as claimed in claim 8, wherein said inherent data is a hash value of said description data.

10. A system for processing a contract as claimed in claim 8, wherein said inherent data is said description data.

11. A system for processing a contract as claimed in claim 8, wherein said description data contains an electronic signature of at least one of said concerned parties.

12. A system for processing a contract as claimed in claim 8, further another processing unit for corresponding a description processing program for describing said contract content on an electronic contract document about said contract with said contract data.

13. A storage unit to be used by at least one of the concerned parties for making a contract for provision of a commodity or service and a third party being characterized by:

storing description data in which a description content about said commodity or service having been transferred between the concerned parties about said contract is built before concluding said contract; and

storing contract data in which said contract content is built; and

said description data and contract data being matched to each other by the inherent data in said description data.

14. A program sending device for sending a program for enabling a computer to execute a predetermined process to a network, said predetermined process comprising:

a process or for creating the inherent data in description data in which a description content about a commodity or service having been transferred between the concerned parties about said contract before concluding said contract, and

a process or for matching contract data in which a contract content about provision of said commodity or service is built to said description data by using said inherent data.

15. A recording medium for recording a contract processing program for enabling a contract processing system to execute a contract process for processing a contract for provision of a commodity or service, wherein said contract process comprising:

a process for creating contract data in which said contract content is built;

a process for retrieving description data matched to said contract data from description data in which a description content about said commodity or service having been transferred between the concerned parties about said contract is built before concluding

said contract;

a process for building inherent data in said retrieved description data in said contract data; and

a process for adding an electronic signature of at least one of said concerned parties to said contract data in which said inherent data is built.

16. A recording medium as claimed in claim 15, wherein said process for building the inherent data is executed so that said retrieved description data is served as said inherent data when it is built in said contract data.

17. A recording medium as claimed in claim 15, wherein said process for building said inherent data is executed to calculate a hash value of said retrieved description data and to build the hash value of said description data in said contract data as said inherent data.

18. A recording medium as claimed in claim 15, wherein said contracting process includes a process for determining whether or not either of the electronic signatures of said concerned parties added to said description data is correct and a process for adding the electronic signature of the other concerned party to said description data if the electronic signature of one of said concerned parties added to said description data is determined to be correct.

19. A recording medium as claimed in claim 15, wherein said contracting process includes a process for

describing said contract content on an electronic contract document on said contract and a process for building inherent data in said describing program in said contract data.

20. A recording medium as claimed in claim 15, wherein said contracting process further includes a process for building a contract content display template for creating from said contract content a contract content display data to be outputted to an output unit in said contract data.

21. A recording medium as claimed in claim 15, wherein said process for writing a signature on said contract data is executed to write said electronic signature on said contract data if a permission for adding said electronic signature to said contract data is received.

22. A method for verifying a content of a contract for provision of a commodity or service comprising the steps of:

if both or either of the concerned parties who concluded the contract for provision of a commodity or service or a third party presents a given contract content, retrieving a description content about said given contract content from a storage unit for managing description data having the description content about said commodity or service having been transferred between the concerned parties and contract data having said contract content as making said description data

correspond with said contract data, before concluding said contract; and

determining if an electronic signature built in said retrieved description data is correct and verifying that said retrieved description content is presented from one of said concerned parties to the other when the contract between said concerned parties is being transferred.

23. A contract verifying method as claimed in claim 22, wherein a hash value of said description data is compared with a value derived by digitizing said electronic signature, for determining said electronic signature is correct.

24. A method for electronically transferring a contract for provision of a commodity or service, comprising the steps of:

obtaining a describing program for enabling concerned parties with said contract to describe a contract content on an electronic contract document or specifying data for specifying said describing program;

generating contract data containing said describing program or said specifying data; and

writing an electronic signature of both or either of said concerned parties on said contract data.

25. A contract processing system to be used by at least one of concerned parties who make a contract for provision of a commodity or service and a third party, comprising:

a processing unit for creating inherent data in a describing program for describing a content of said contract on an electronic contract document; and

another processing unit for corresponding contract data obtained by describing said contract content on said electronic contract document with said describing program by using inherent data in said program.

26. A recording medium for recording a contract processing program for allowing a contract process for proceeding a contract for provision of a commodity or service to be executed by a contract processing system, said contract process comprising:

a contract content describing process for describing a content of said contract on an electronic contract document;

a contract data generating process for generating contract data from an electronic contract document in which said contract content is described;

a program inherent data building process for building inherent data in a describing program for executing said contract content describing process; and

a contract data signing process for adding a signature of at least one of concerned parties with said contract to contract data in which said program inherent data is built.

ABSTRACT OF THE DISCLOSURE

A contracting method and system are arranged to obtain description data in which a description content presented by one of the concerned parties with a contract to the other is built or data for specifying the description content before the concerned parties make an electronic contract for provision of a commodity or service (contract data creation signing process), generate contract data containing the description data or the specifying data (contract data creation signing process), and writing an electronic signature of both or either of the concerned parties with the contract data (contract data creation singing process and contract data signing process).

FIG.1

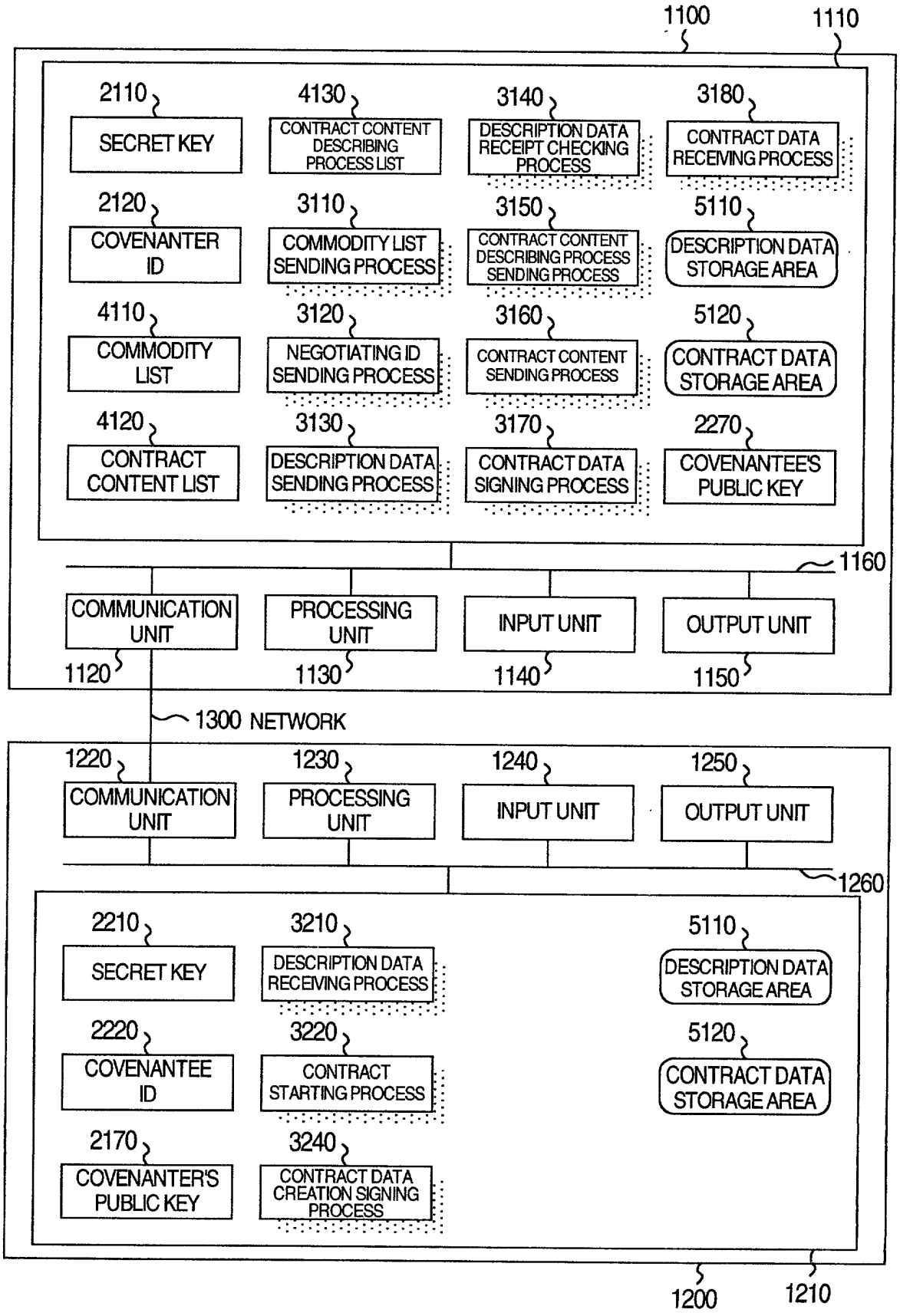

1100
1110
2110
SECRET KEY
4130
CONTRACT CONTENT DESCRIBING PROCESS LIST
3140
DESCRIPTION DATA RECEIPT CHECKING PROCESS
3180
CONTRACT DATA RECEIVING PROCESS
2120
COVENANTER ID
3110
COMMODITY LIST SENDING PROCESS
3150
CONTRACT CONTENT DESCRIBING PROCESS SENDING PROCESS
5110
DESCRIPTION DATA STORAGE AREA
4110
COMMODITY LIST
3120
NEGOTIATING ID SENDING PROCESS
3160
CONTRACT CONTENT SENDING PROCESS
5120
CONTRACT DATA STORAGE AREA
4120
CONTRACT CONTENT LIST
3130
DESCRIPTION DATA SENDING PROCESS
3170
CONTRACT DATA SIGNING PROCESS
2270
COVENANTEE'S PUBLIC KEY
1160
COMMUNICATION UNIT
1120
PROCESSING UNIT
1130
INPUT UNIT
1140
OUTPUT UNIT
1150
1300 NETWORK
1220
COMMUNICATION UNIT
1230
PROCESSING UNIT
1240
INPUT UNIT
1250
OUTPUT UNIT
1260
2210
SECRET KEY
3210
DESCRIPTION DATA RECEIVING PROCESS
5110
DESCRIPTION DATA STORAGE AREA
2220
COVENANTEE ID
3220
CONTRACT STARTING PROCESS
5120
CONTRACT DATA STORAGE AREA
2170
COVENANTER'S PUBLIC KEY
3240
CONTRACT DATA CREATION SIGNING PROCESS
1200
1210

FIG.2

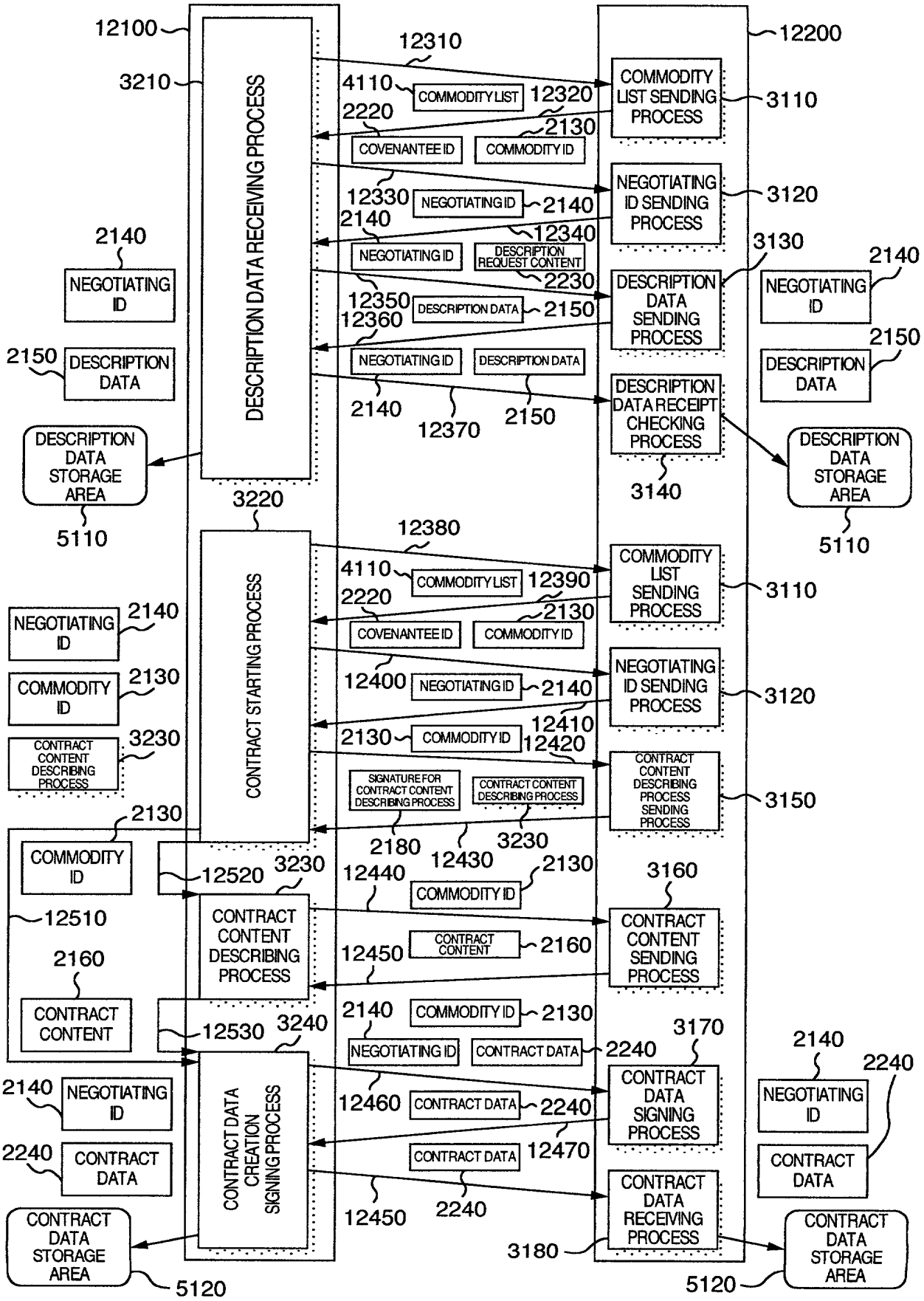

12100
DESCRIPTION DATA RECEIVING PROCESS
3210
12310
4110
COMMODITY LIST
12320
2220
COVENANTEE ID
2130
COMMODITY ID
12330
NEGOTIATING ID
2140
2140
12340
NEGOTIATING ID
DESCRIPTION REQUEST CONTENT
2230
12350
DESCRIPTION DATA
2150
12360
NEGOTIATING ID
DESCRIPTION DATA
2140
12370
2150
2140
NEGOTIATING ID
2150
DESCRIPTION DATA
DESCRIPTION DATA STORAGE AREA
5110
3220
12380
4110
COMMODITY LIST
12390
2220
COVENANTEE ID
2130
COMMODITY ID
12400
NEGOTIATING ID
2140
12410
2130
COMMODITY ID
12420
SIGNATURE FOR CONTRACT CONTENT DESCRIBING PROCESS
CONTRACT CONTENT DESCRIBING PROCESS
2180
12430
3230
2140
NEGOTIATING ID
2130
COMMODITY ID
3230
CONTRACT CONTENT DESCRIBING PROCESS
2130
COMMODITY ID
12520
3230
12510
2160
CONTRACT CONTENT
12530
3240
2140
NEGOTIATING ID
2240
CONTRACT DATA
CONTRACT DATA CREATION SIGNING PROCESS
CONTRACT DATA STORAGE AREA
5120
12200
COMMODITY LIST SENDING PROCESS
3110
NEGOTIATING ID SENDING PROCESS
3120
3130
DESCRIPTION DATA SENDING PROCESS
DESCRIPTION DATA RECEIPT CHECKING PROCESS
3140
DESCRIPTION DATA STORAGE AREA
5110
COMMODITY LIST SENDING PROCESS
3110
NEGOTIATING ID SENDING PROCESS
3120
CONTRACT CONTENT DESCRIBING PROCESS SENDING PROCESS
3150
12440
COMMODITY ID
2130
3160
CONTRACT CONTENT SENDING PROCESS
12450
CONTRACT CONTENT
2160
2140
COMMODITY ID
2130
3170
NEGOTIATING ID
CONTRACT DATA
2240
CONTRACT DATA SIGNING PROCESS
12460
CONTRACT DATA
2240
12470
CONTRACT DATA
CONTRACT DATA RECEIVING PROCESS
12450
2240
3180
2140
NEGOTIATING ID
2240
CONTRACT DATA
CONTRACT DATA STORAGE AREA
5120

FIG.3

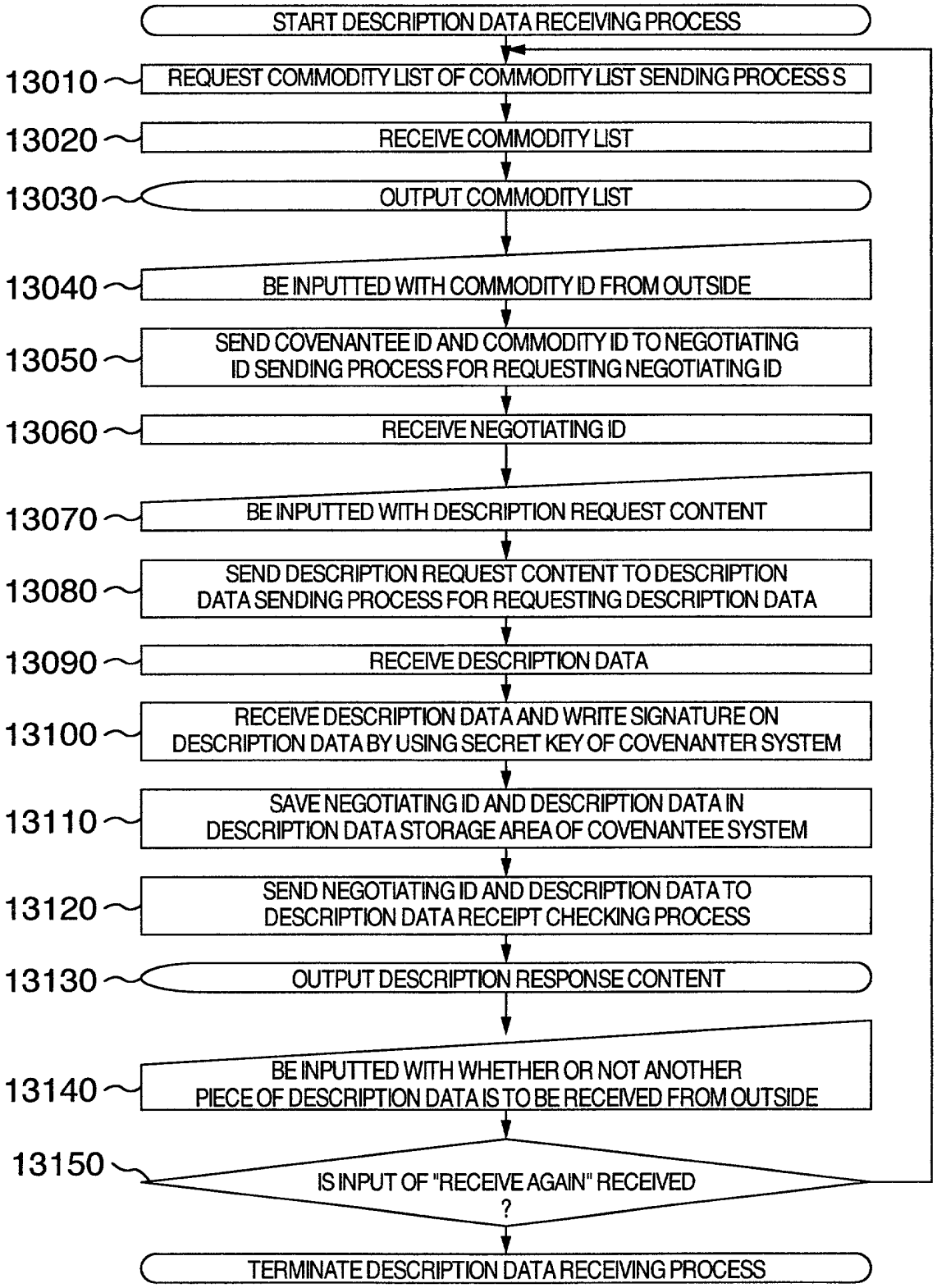

START DESCRIPTION DATA RECEIVING PROCESS
13010
REQUEST COMMODITY LIST OF COMMODITY LIST SENDING PROCESS S
13020
RECEIVE COMMODITY LIST
13030
OUTPUT COMMODITY LIST
13040
BE INPUTTED WITH COMMODITY ID FROM OUTSIDE
13050
SEND COVENANTEE ID AND COMMODITY ID TO NEGOTIATING ID SENDING PROCESS FOR REQUESTING NEGOTIATING ID
13060
RECEIVE NEGOTIATING ID
13070
BE INPUTTED WITH DESCRIPTION REQUEST CONTENT
13080
SEND DESCRIPTION REQUEST CONTENT TO DESCRIPTION DATA SENDING PROCESS FOR REQUESTING DESCRIPTION DATA
13090
RECEIVE DESCRIPTION DATA
13100
RECEIVE DESCRIPTION DATA AND WRITE SIGNATURE ON DESCRIPTION DATA BY USING SECRET KEY OF COVENANTER SYSTEM
13110
SAVE NEGOTIATING ID AND DESCRIPTION DATA IN DESCRIPTION DATA STORAGE AREA OF COVENANTEE SYSTEM
13120
SEND NEGOTIATING ID AND DESCRIPTION DATA TO DESCRIPTION DATA RECEIPT CHECKING PROCESS
13130
OUTPUT DESCRIPTION RESPONSE CONTENT
13140
BE INPUTTED WITH WHETHER OR NOT ANOTHER PIECE OF DESCRIPTION DATA IS TO BE RECEIVED FROM OUTSIDE
13150
IS INPUT OF "RECEIVE AGAIN" RECEIVED ?
TERMINATE DESCRIPTION DATA RECEIVING PROCESS

FIG.4

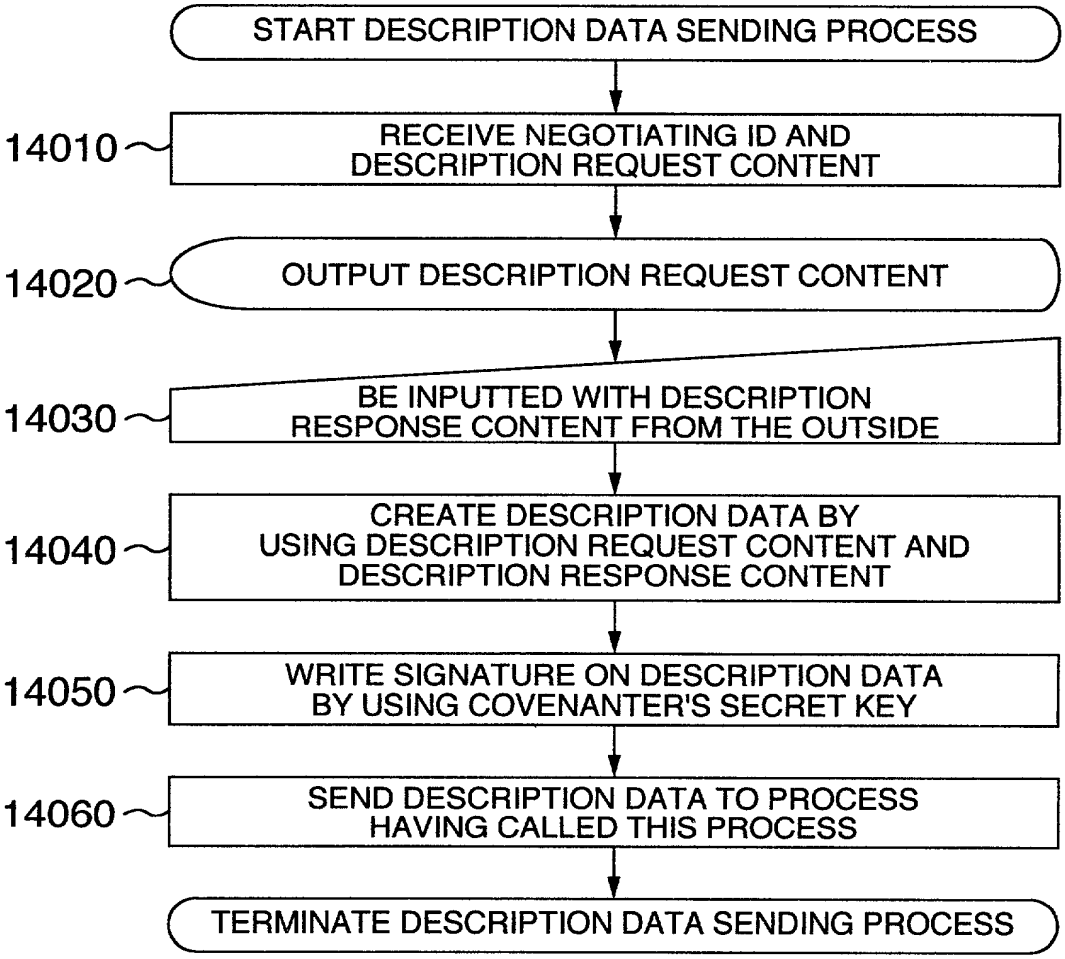

START DESCRIPTION DATA SENDING PROCESS
14010
RECEIVE NEGOTIATING ID AND DESCRIPTION REQUEST CONTENT
14020
OUTPUT DESCRIPTION REQUEST CONTENT
14030
BE INPUTTED WITH DESCRIPTION RESPONSE CONTENT FROM THE OUTSIDE
14040
CREATE DESCRIPTION DATA BY USING DESCRIPTION REQUEST CONTENT AND DESCRIPTION RESPONSE CONTENT
14050
WRITE SIGNATURE ON DESCRIPTION DATA BY USING COVENANTER'S SECRET KEY
14060
SEND DESCRIPTION DATA TO PROCESS HAVING CALLED THIS PROCESS
TERMINATE DESCRIPTION DATA SENDING PROCESS

FIG.5

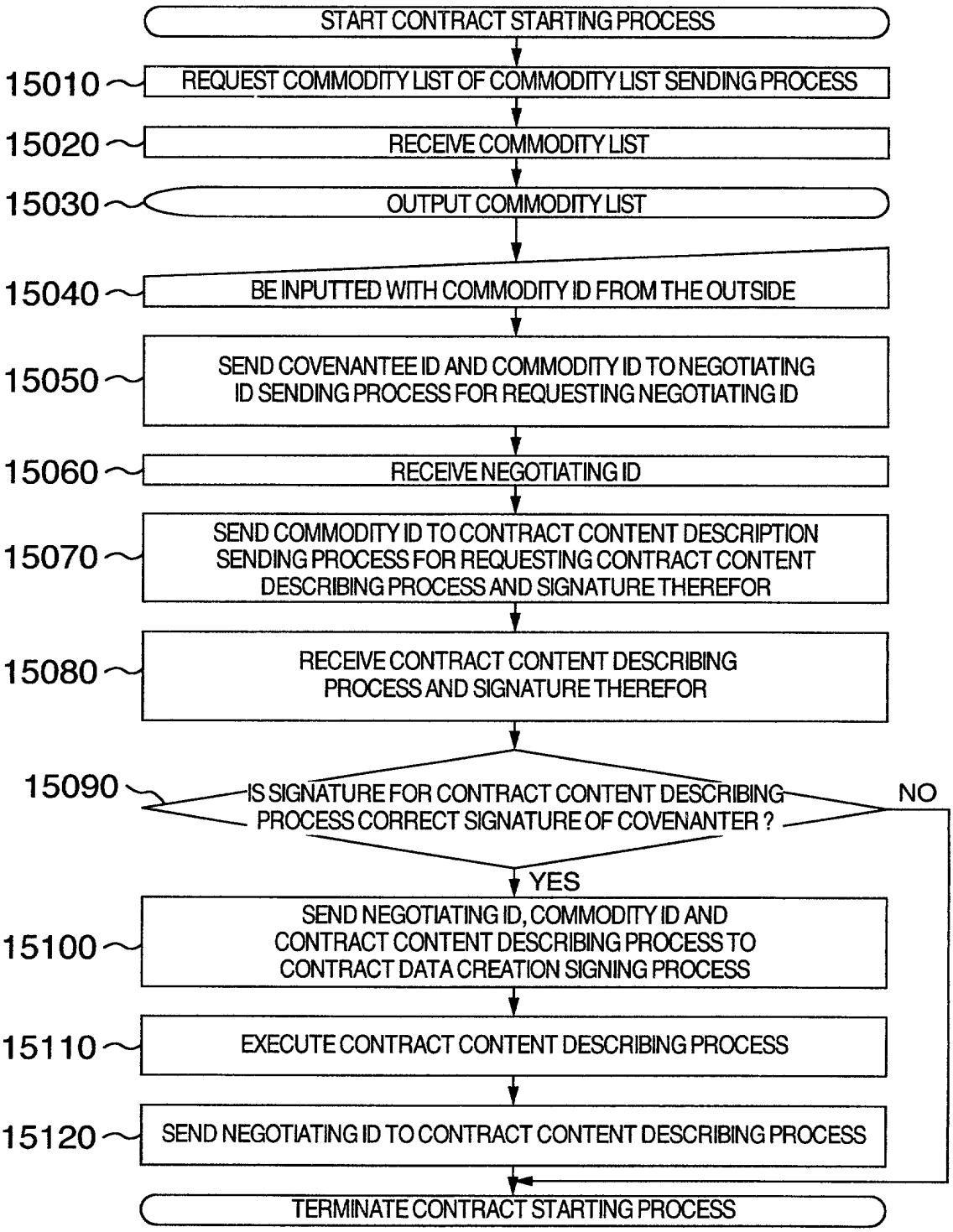

START CONTRACT STARTING PROCESS
15010
REQUEST COMMODITY LIST OF COMMODITY LIST SENDING PROCESS
15020
RECEIVE COMMODITY LIST
15030
OUTPUT COMMODITY LIST
15040
BE INPUTTED WITH COMMODITY ID FROM THE OUTSIDE
15050
SEND COVENANTEE ID AND COMMODITY ID TO NEGOTIATING ID SENDING PROCESS FOR REQUESTING NEGOTIATING ID
15060
RECEIVE NEGOTIATING ID
15070
SEND COMMODITY ID TO CONTRACT CONTENT DESCRIPTION SENDING PROCESS FOR REQUESTING CONTRACT CONTENT DESCRIBING PROCESS AND SIGNATURE THEREFOR
15080
RECEIVE CONTRACT CONTENT DESCRIBING PROCESS AND SIGNATURE THEREFOR
15090
IS SIGNATURE FOR CONTRACT CONTENT DESCRIBING PROCESS CORRECT SIGNATURE OF COVENANTER ?
NO
YES
15100
SEND NEGOTIATING ID, COMMODITY ID AND CONTRACT CONTENT DESCRIBING PROCESS TO CONTRACT DATA CREATION SIGNING PROCESS
15110
EXECUTE CONTRACT CONTENT DESCRIBING PROCESS
15120
SEND NEGOTIATING ID TO CONTRACT CONTENT DESCRIBING PROCESS
TERMINATE CONTRACT STARTING PROCESS

FIG.6

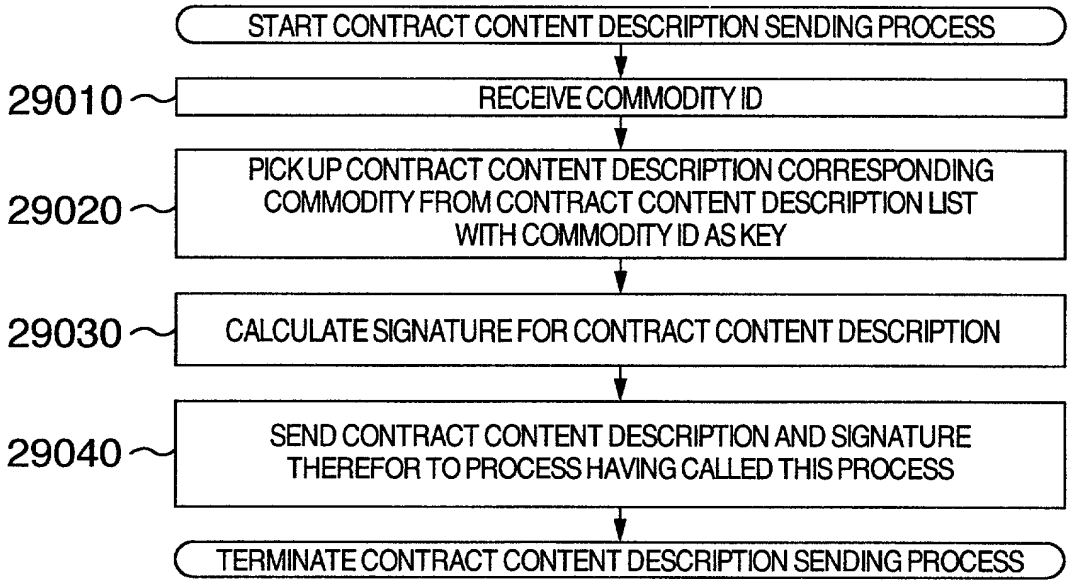

START CONTRACT CONTENT DESCRIPTION SENDING PROCESS
29010
RECEIVE COMMODITY ID
29020
PICK UP CONTRACT CONTENT DESCRIPTION CORRESPONDING COMMODITY FROM CONTRACT CONTENT DESCRIPTION LIST WITH COMMODITY ID AS KEY
29030
CALCULATE SIGNATURE FOR CONTRACT CONTENT DESCRIPTION
29040
SEND CONTRACT CONTENT DESCRIPTION AND SIGNATURE THEREFOR TO PROCESS HAVING CALLED THIS PROCESS
TERMINATE CONTRACT CONTENT DESCRIPTION SENDING PROCESS

FIG.7

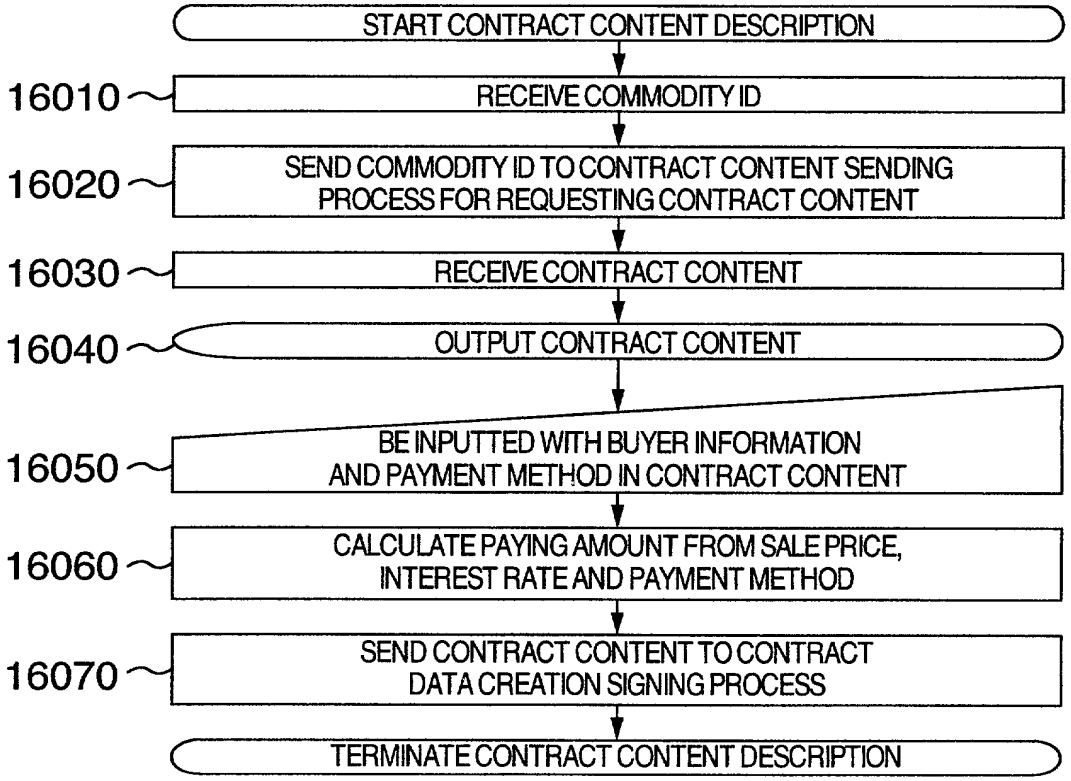

START CONTRACT CONTENT DESCRIPTION
16010
RECEIVE COMMODITY ID
16020
SEND COMMODITY ID TO CONTRACT CONTENT SENDING PROCESS FOR REQUESTING CONTRACT CONTENT
16030
RECEIVE CONTRACT CONTENT
16040
OUTPUT CONTRACT CONTENT
16050
BE INPUTTED WITH BUYER INFORMATION AND PAYMENT METHOD IN CONTRACT CONTENT
16060
CALCULATE PAYING AMOUNT FROM SALE PRICE, INTEREST RATE AND PAYMENT METHOD
16070
SEND CONTRACT CONTENT TO CONTRACT DATA CREATION SIGNING PROCESS
TERMINATE CONTRACT CONTENT DESCRIPTION

FIG.8

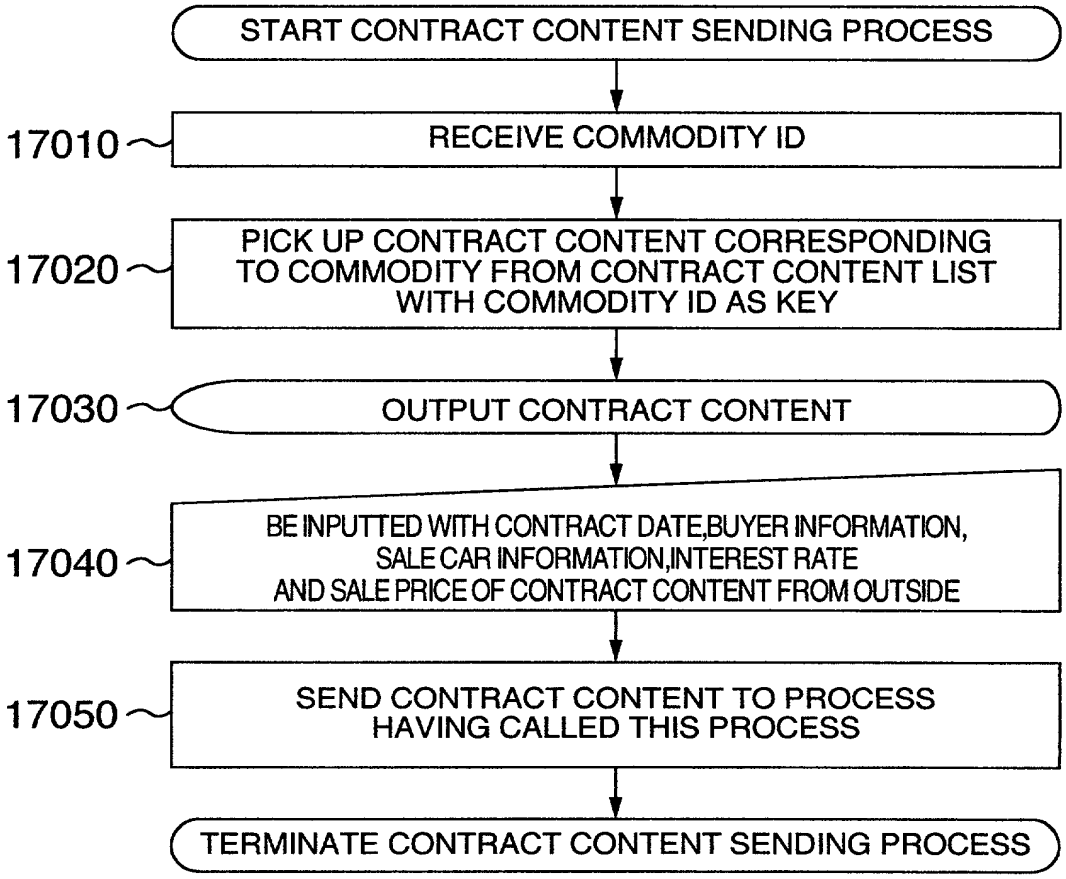

START CONTRACT CONTENT SENDING PROCESS
17010
RECEIVE COMMODITY ID
17020
PICK UP CONTRACT CONTENT CORRESPONDING TO COMMODITY FROM CONTRACT CONTENT LIST WITH COMMODITY ID AS KEY
17030
OUTPUT CONTRACT CONTENT
17040
BE INPUTTED WITH CONTRACT DATE,BUYER INFORMATION, SALE CAR INFORMATION,INTEREST RATE AND SALE PRICE OF CONTRACT CONTENT FROM OUTSIDE
17050
SEND CONTRACT CONTENT TO PROCESS HAVING CALLED THIS PROCESS
TERMINATE CONTRACT CONTENT SENDING PROCESS

FIG.9

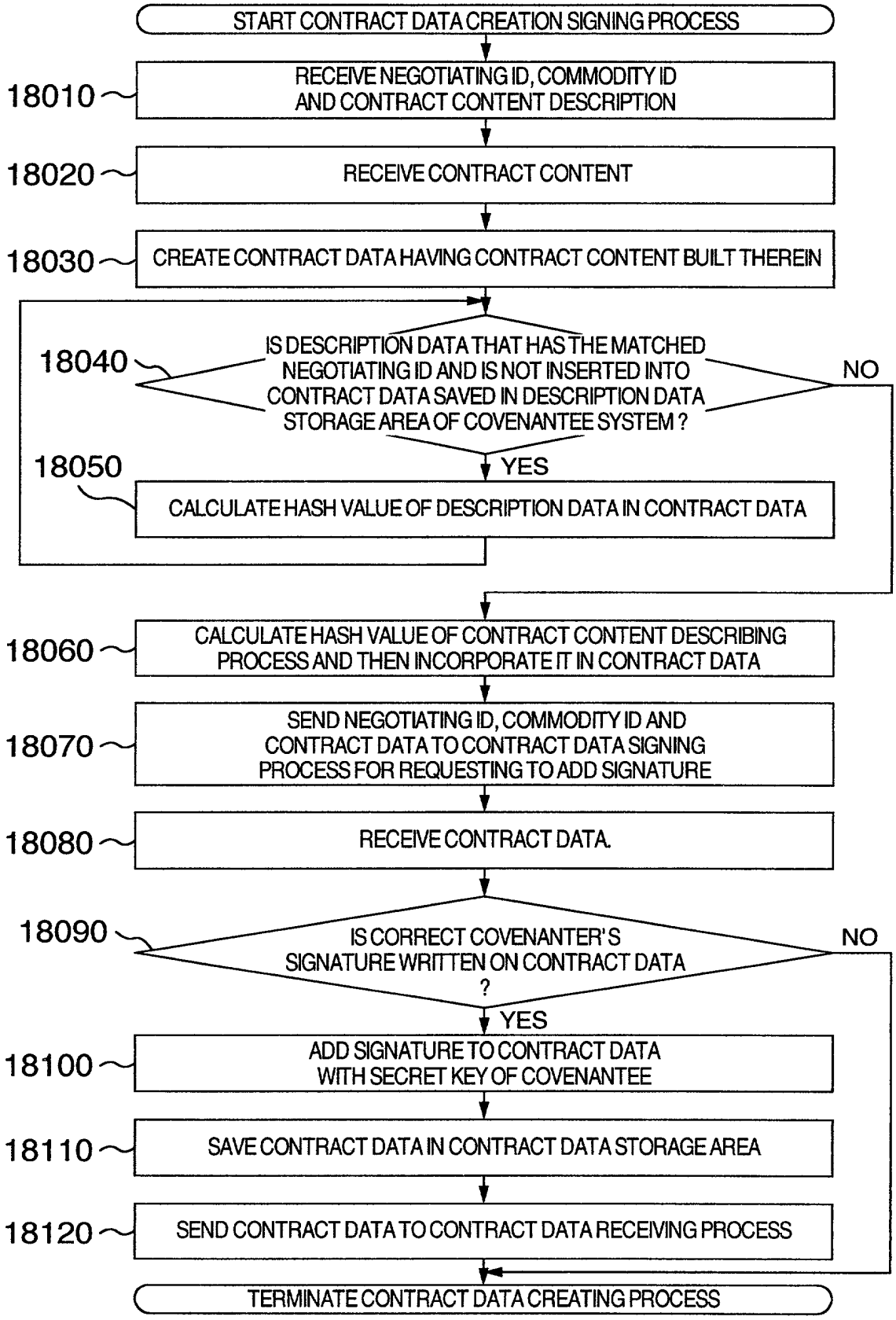

START CONTRACT DATA CREATION SIGNING PROCESS
18010
RECEIVE NEGOTIATING ID, COMMODITY ID AND CONTRACT CONTENT DESCRIPTION
18020
RECEIVE CONTRACT CONTENT
18030
CREATE CONTRACT DATA HAVING CONTRACT CONTENT BUILT THEREIN
18040
IS DESCRIPTION DATA THAT HAS THE MATCHED NEGOTIATING ID AND IS NOT INSERTED INTO CONTRACT DATA SAVED IN DESCRIPTION DATA STORAGE AREA OF COVENANTEE SYSTEM ?
NO
YES
18050
CALCULATE HASH VALUE OF DESCRIPTION DATA IN CONTRACT DATA
18060
CALCULATE HASH VALUE OF CONTRACT CONTENT DESCRIBING PROCESS AND THEN INCORPORATE IT IN CONTRACT DATA
18070
SEND NEGOTIATING ID, COMMODITY ID AND CONTRACT DATA TO CONTRACT DATA SIGNING PROCESS FOR REQUESTING TO ADD SIGNATURE
18080
RECEIVE CONTRACT DATA.
18090
IS CORRECT COVENANTER'S SIGNATURE WRITTEN ON CONTRACT DATA ?
NO
YES
18100
ADD SIGNATURE TO CONTRACT DATA WITH SECRET KEY OF COVENANTEE
18110
SAVE CONTRACT DATA IN CONTRACT DATA STORAGE AREA
18120
SEND CONTRACT DATA TO CONTRACT DATA RECEIVING PROCESS
TERMINATE CONTRACT DATA CREATING PROCESS

FIG.10

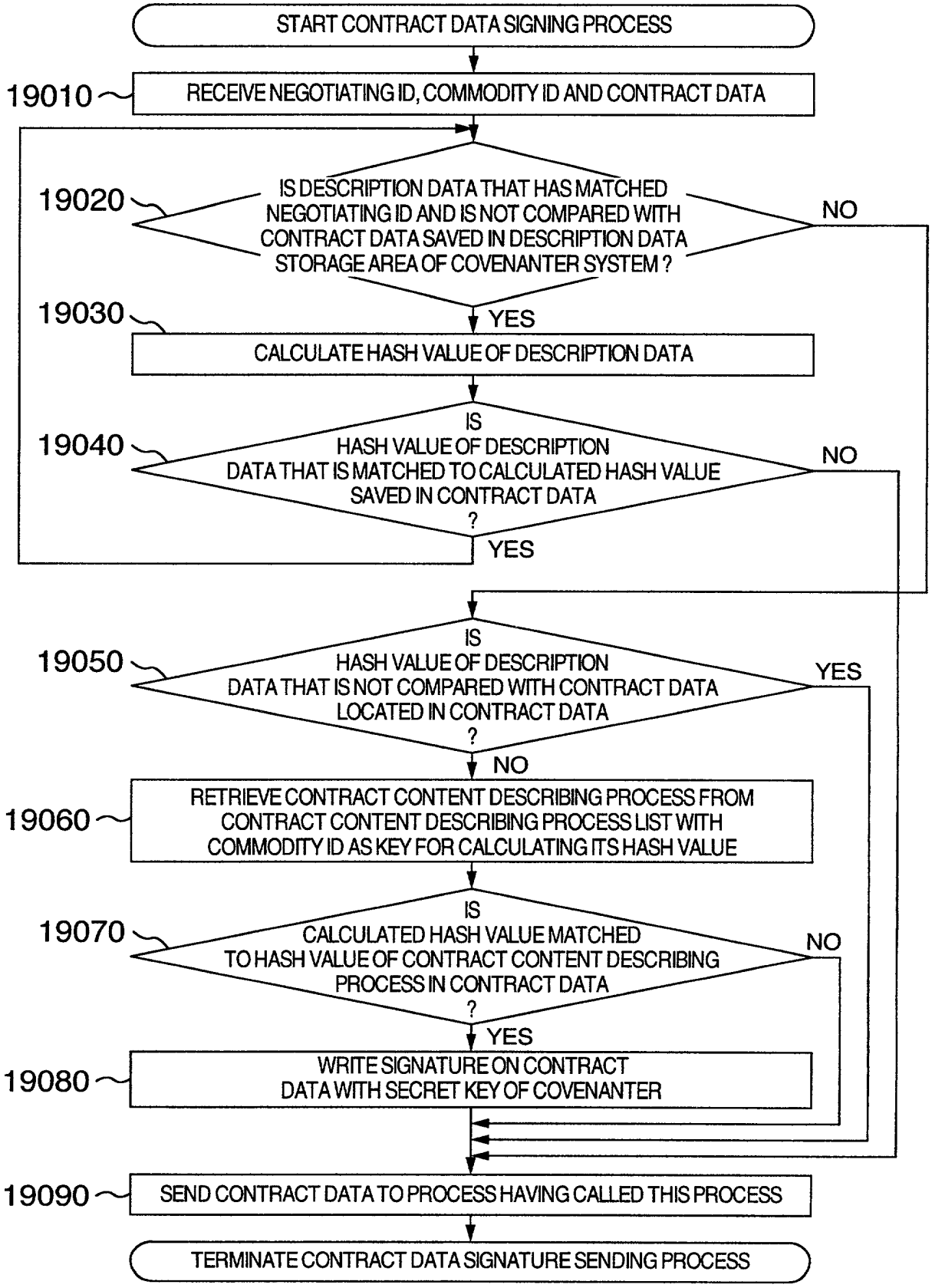

START CONTRACT DATA SIGNING PROCESS
19010
RECEIVE NEGOTIATING ID, COMMODITY ID AND CONTRACT DATA
19020
IS DESCRIPTION DATA THAT HAS MATCHED NEGOTIATING ID AND IS NOT COMPARED WITH CONTRACT DATA SAVED IN DESCRIPTION DATA STORAGE AREA OF COVENANTER SYSTEM ?
NO
YES
19030
CALCULATE HASH VALUE OF DESCRIPTION DATA
19040
IS HASH VALUE OF DESCRIPTION DATA THAT IS MATCHED TO CALCULATED HASH VALUE SAVED IN CONTRACT DATA ?
NO
YES
19050
IS HASH VALUE OF DESCRIPTION DATA THAT IS NOT COMPARED WITH CONTRACT DATA LOCATED IN CONTRACT DATA ?
YES
NO
19060
RETRIEVE CONTRACT CONTENT DESCRIBING PROCESS FROM CONTRACT CONTENT DESCRIBING PROCESS LIST WITH COMMODITY ID AS KEY FOR CALCULATING ITS HASH VALUE
19070
IS CALCULATED HASH VALUE MATCHED TO HASH VALUE OF CONTRACT CONTENT DESCRIBING PROCESS IN CONTRACT DATA ?
NO
YES
19080
WRITE SIGNATURE ON CONTRACT DATA WITH SECRET KEY OF COVENANTER
19090
SEND CONTRACT DATA TO PROCESS HAVING CALLED THIS PROCESS
TERMINATE CONTRACT DATA SIGNATURE SENDING PROCESS

FIG.11

2130 COMMODITY ID	4110 COMMODITY INFORMATION 2135
0001	PASSENGER AUTOMOBILE : '93 MODEL : 350,000YEN
0002	PASSENGER AUTOMOBILE : '91 MODEL : 680,000YEN
0003	HIGH-GRADE CAR : '95 MODEL : 2,240,000YEN
0004	COMMERCIAL MOTOR VEHICLE : '98 MODEL : 510,000YEN
⋮	⋮

FIG.12

2130 COMMODITY ID	4120 CONTRACT CONTENT 2160
0001	-------
0002	-------
0003	-------
0004	-------
⋮	⋮

FIG.13

2130 COMMODITY ID	4130 CONTRACT CONTENT DESCRIBING PROCESS 3230
0001	-------
0002	-------
0003	-------
0004	-------
⋮	⋮

FIG.14

2140 NEGOTIATING ID	5110 DESCRIPTION DATA 2150
0001	-------
0002	-------
0003	-------
0004	-------
⋮	⋮

FIG.15

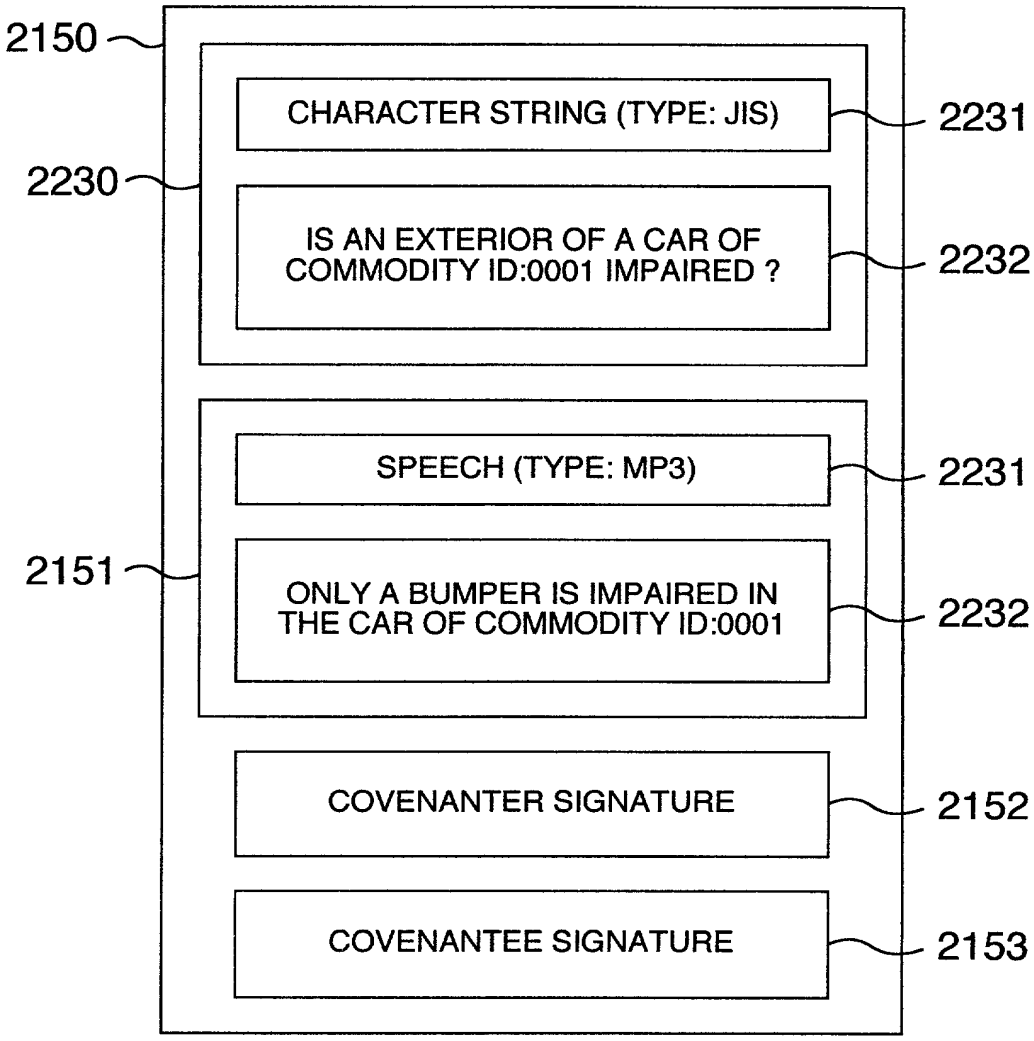

2150
CHARACTER STRING (TYPE: JIS)
2231
2230
IS AN EXTERIOR OF A CAR OF COMMODITY ID:0001 IMPAIRED ?
2232
SPEECH (TYPE: MP3)
2231
2151
ONLY A BUMPER IS IMPAIRED IN THE CAR OF COMMODITY ID:0001
2232
COVENANTER SIGNATURE
2152
COVENANTEE SIGNATURE
2153

FIG.16

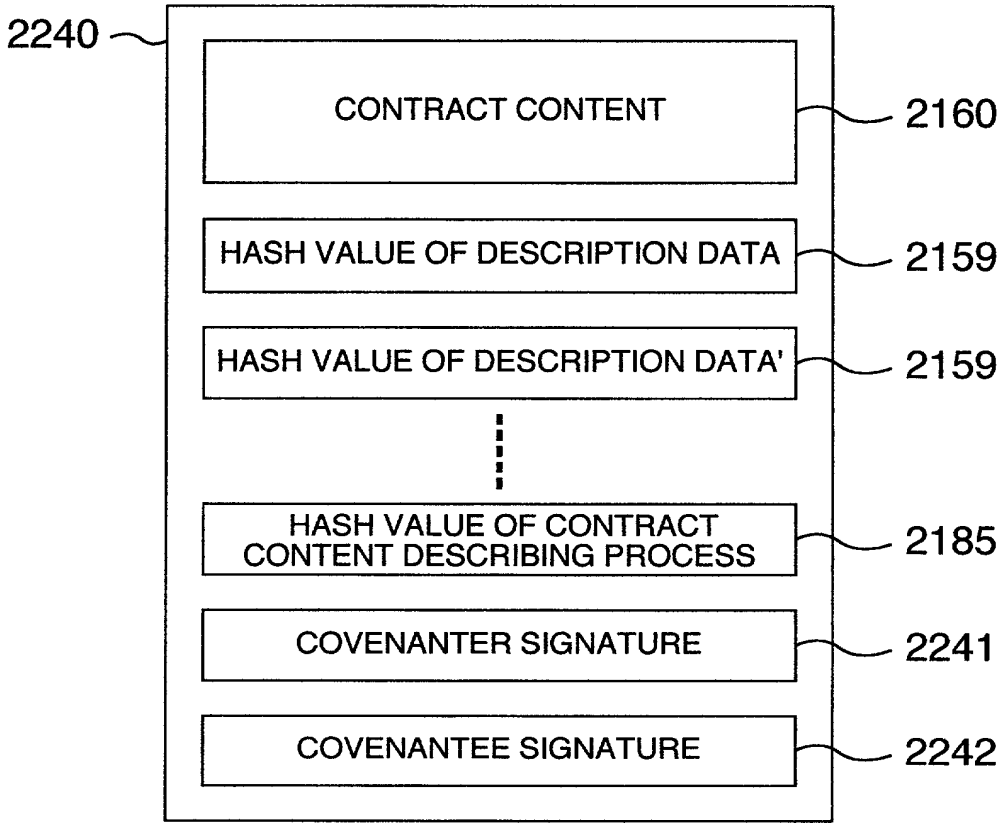

2240
CONTRACT CONTENT
2160
HASH VALUE OF DESCRIPTION DATA
2159
HASH VALUE OF DESCRIPTION DATA'
2159
HASH VALUE OF CONTRACT CONTENT DESCRIBING PROCESS
2185
COVENANTER SIGNATURE
2241
COVENANTEE SIGNATURE
2242

FIG.17

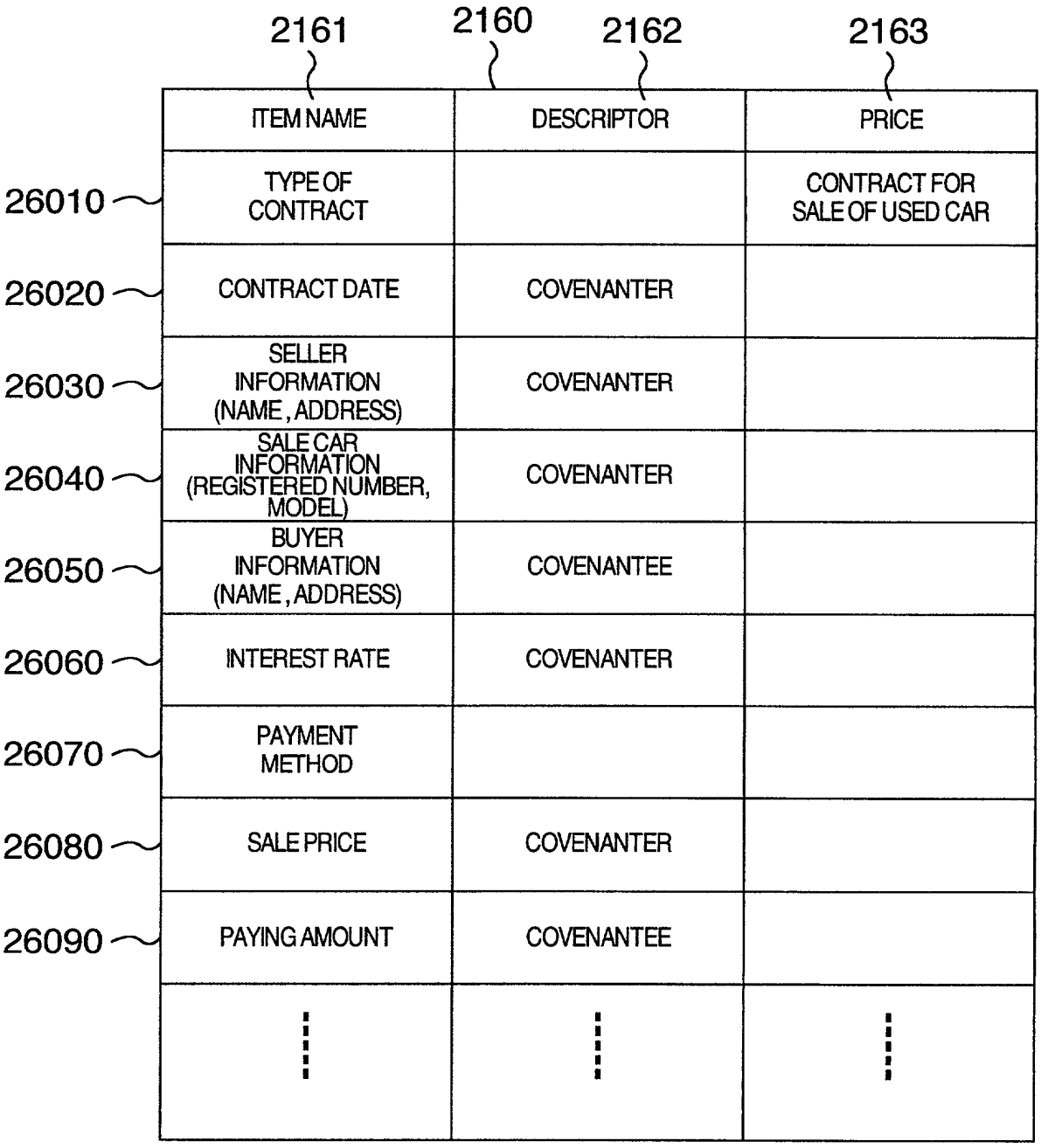

2161
2160
2162
2163
ITEM NAME
DESCRIPTOR
PRICE
26010
TYPE OF CONTRACT
CONTRACT FOR SALE OF USED CAR
26020
CONTRACT DATE
COVENANTER
26030
SELLER INFORMATION (NAME, ADDRESS)
COVENANTER
26040
SALE CAR INFORMATION (REGISTERED NUMBER, MODEL)
COVENANTER
26050
BUYER INFORMATION (NAME, ADDRESS)
COVENANTEE
26060
INTEREST RATE
COVENANTER
26070
PAYMENT METHOD
26080
SALE PRICE
COVENANTER
26090
PAYING AMOUNT
COVENANTEE

FIG.18

2161 ITEM NAME	2160 DESCRIPTOR	2162 2163 PRICE
SECURITY NAME		CP
ISSUING DATE	CONVENANTER	
RETIREMENT DATE	CONVENANTER	
ISSUER INFORMATION (REPRESENTATIVE, COMPANY NAME, ADDRESS)	CONVENANTER	
ASSIGNER INFORMATION (REPRESENTATIVE, COMPANY NAME, ADDRESS)	CONVENANTEE	
RETIREMENT AMOUNT	CONVENANTER	
NOTES	CONVENANTER CONVENANTEE	
⋮	⋮	⋮

FIG.19

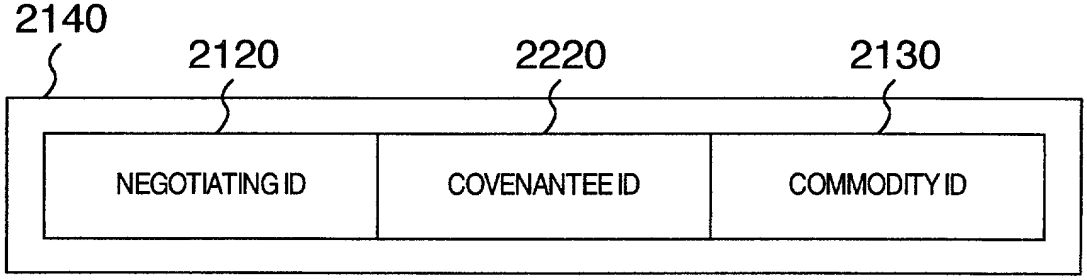


FIG.20

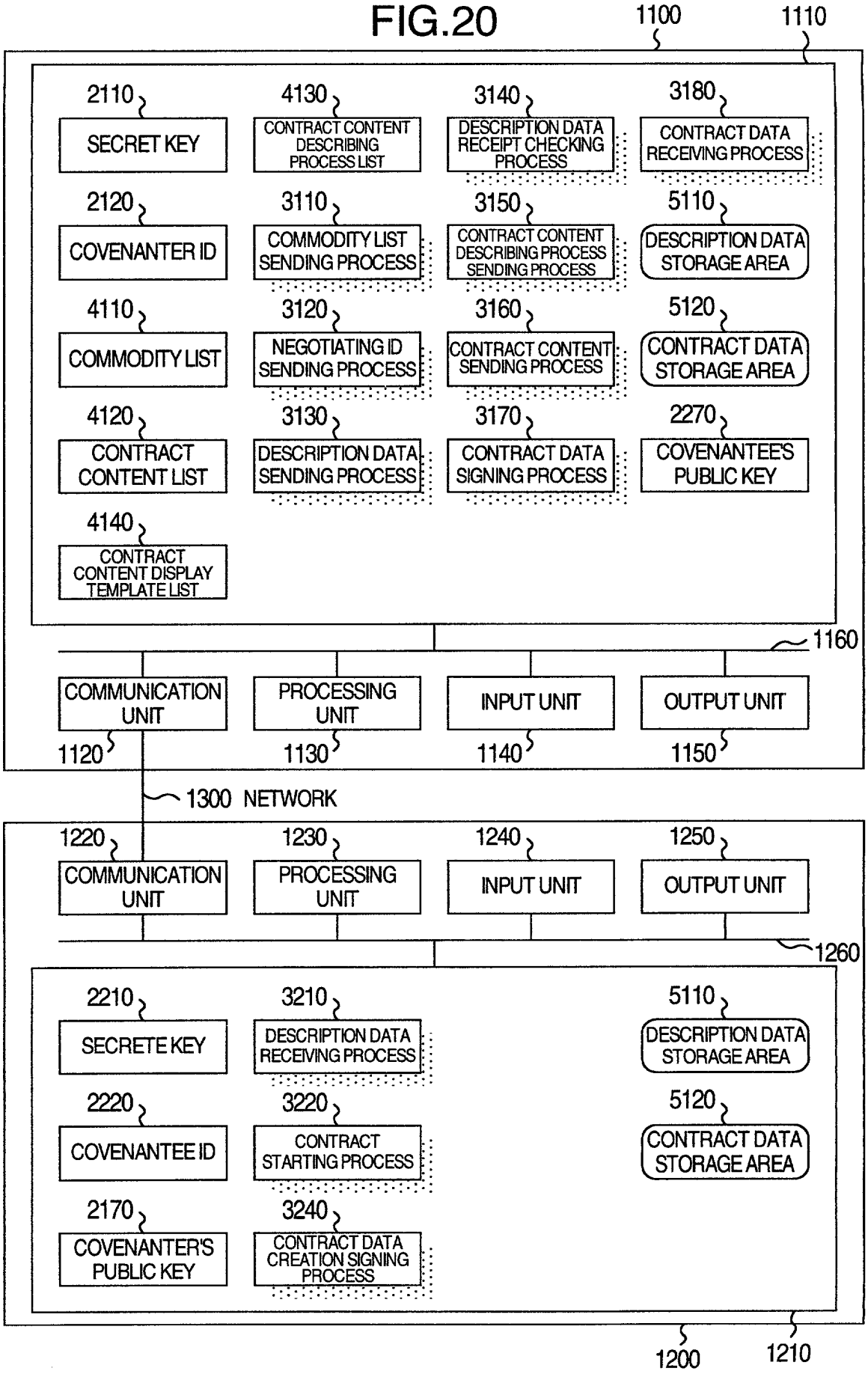

1100
1110
2110
SECRET KEY
4130
CONTRACT CONTENT DESCRIBING PROCESS LIST
3140
DESCRIPTION DATA RECEIPT CHECKING PROCESS
3180
CONTRACT DATA RECEIVING PROCESS
2120
COVENANTER ID
3110
COMMODITY LIST SENDING PROCESS
3150
CONTRACT CONTENT DESCRIBING PROCESS SENDING PROCESS
5110
DESCRIPTION DATA STORAGE AREA
4110
COMMODITY LIST
3120
NEGOTIATING ID SENDING PROCESS
3160
CONTRACT CONTENT SENDING PROCESS
5120
CONTRACT DATA STORAGE AREA
4120
CONTRACT CONTENT LIST
3130
DESCRIPTION DATA SENDING PROCESS
3170
CONTRACT DATA SIGNING PROCESS
2270
COVENANTEE'S PUBLIC KEY
4140
CONTRACT CONTENT DISPLAY TEMPLATE LIST
1160
COMMUNICATION UNIT
1120
PROCESSING UNIT
1130
INPUT UNIT
1140
OUTPUT UNIT
1150
1300 NETWORK
1220
COMMUNICATION UNIT
1230
PROCESSING UNIT
1240
INPUT UNIT
1250
OUTPUT UNIT
1260
2210
SECRETE KEY
3210
DESCRIPTION DATA RECEIVING PROCESS
5110
DESCRIPTION DATA STORAGE AREA
2220
COVENANTEE ID
3220
CONTRACT STARTING PROCESS
5120
CONTRACT DATA STORAGE AREA
2170
COVENANTER'S PUBLIC KEY
3240
CONTRACT DATA CREATION SIGNING PROCESS
1200
1210

FIG.21

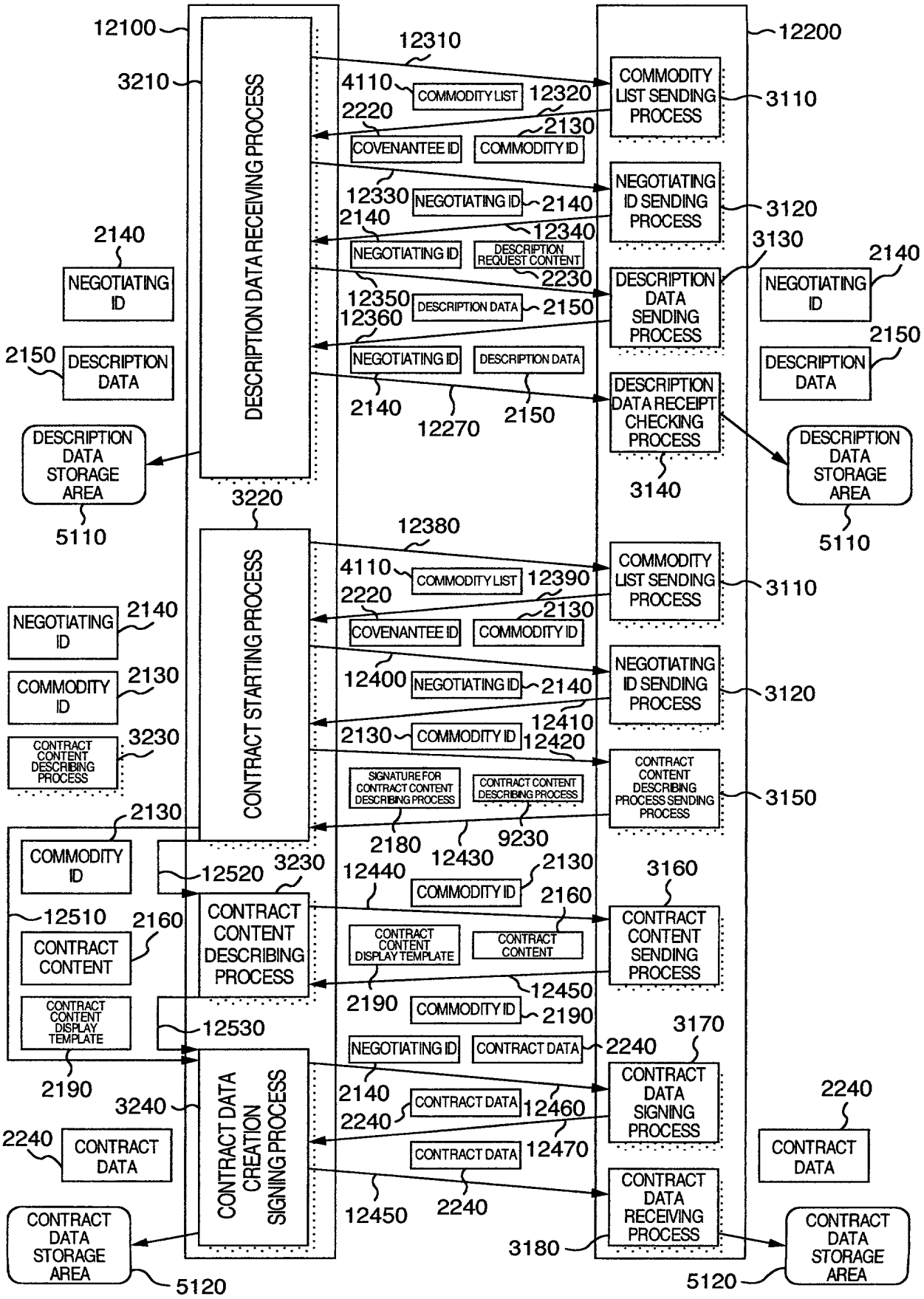

12100
DESCRIPTION DATA RECEIVING PROCESS
3210
12310
4110
COMMODITY LIST
12320
2220
2130
COVENANTEE ID
COMMODITY ID
12330
NEGOTIATING ID
2140
2140
12340
NEGOTIATING ID
DESCRIPTION REQUEST CONTENT
2230
12350
DESCRIPTION DATA
2150
12360
NEGOTIATING ID
DESCRIPTION DATA
2140
12270
2150
12200
COMMODITY LIST SENDING PROCESS
3110
NEGOTIATING ID SENDING PROCESS
3120
3130
DESCRIPTION DATA SENDING PROCESS
DESCRIPTION DATA RECEIPT CHECKING PROCESS
3140
2140
NEGOTIATING ID
2150
DESCRIPTION DATA
DESCRIPTION DATA STORAGE AREA
5110
DESCRIPTION DATA STORAGE AREA
5110
3220
CONTRACT STARTING PROCESS
12380
4110
COMMODITY LIST
12390
2220
2130
COVENANTEE ID
COMMODITY ID
12400
NEGOTIATING ID
2140
12410
2130
COMMODITY ID
12420
SIGNATURE FOR CONTRACT CONTENT DESCRIBING PROCESS
CONTRACT CONTENT DESCRIBING PROCESS
2180
12430
9230
COMMODITY LIST SENDING PROCESS
3110
NEGOTIATING ID SENDING PROCESS
3120
CONTRACT CONTENT DESCRIBING PROCESS SENDING PROCESS
3150
NEGOTIATING ID
2140
COMMODITY ID
2130
CONTRACT CONTENT DESCRIBING PROCESS
3230
2130
COMMODITY ID
12520
3230
12440
COMMODITY ID
2130
3160
12510
2160
CONTRACT CONTENT
CONTRACT CONTENT DESCRIBING PROCESS
CONTRACT CONTENT DISPLAY TEMPLATE
CONTRACT CONTENT
2160
CONTRACT CONTENT SENDING PROCESS
12450
CONTRACT CONTENT DISPLAY TEMPLATE
12530
2190
COMMODITY ID
2190
3170
NEGOTIATING ID
CONTRACT DATA
2240
2190
3240
2140
CONTRACT DATA
12460
2240
CONTRACT DATA SIGNING PROCESS
2240
2240
CONTRACT DATA
CONTRACT DATA
CONTRACT DATA CREATION SIGNING PROCESS
CONTRACT DATA
12470
12450
2240
CONTRACT DATA RECEIVING PROCESS
CONTRACT DATA STORAGE AREA
5120
3180
CONTRACT DATA STORAGE AREA
5120

FIG.22

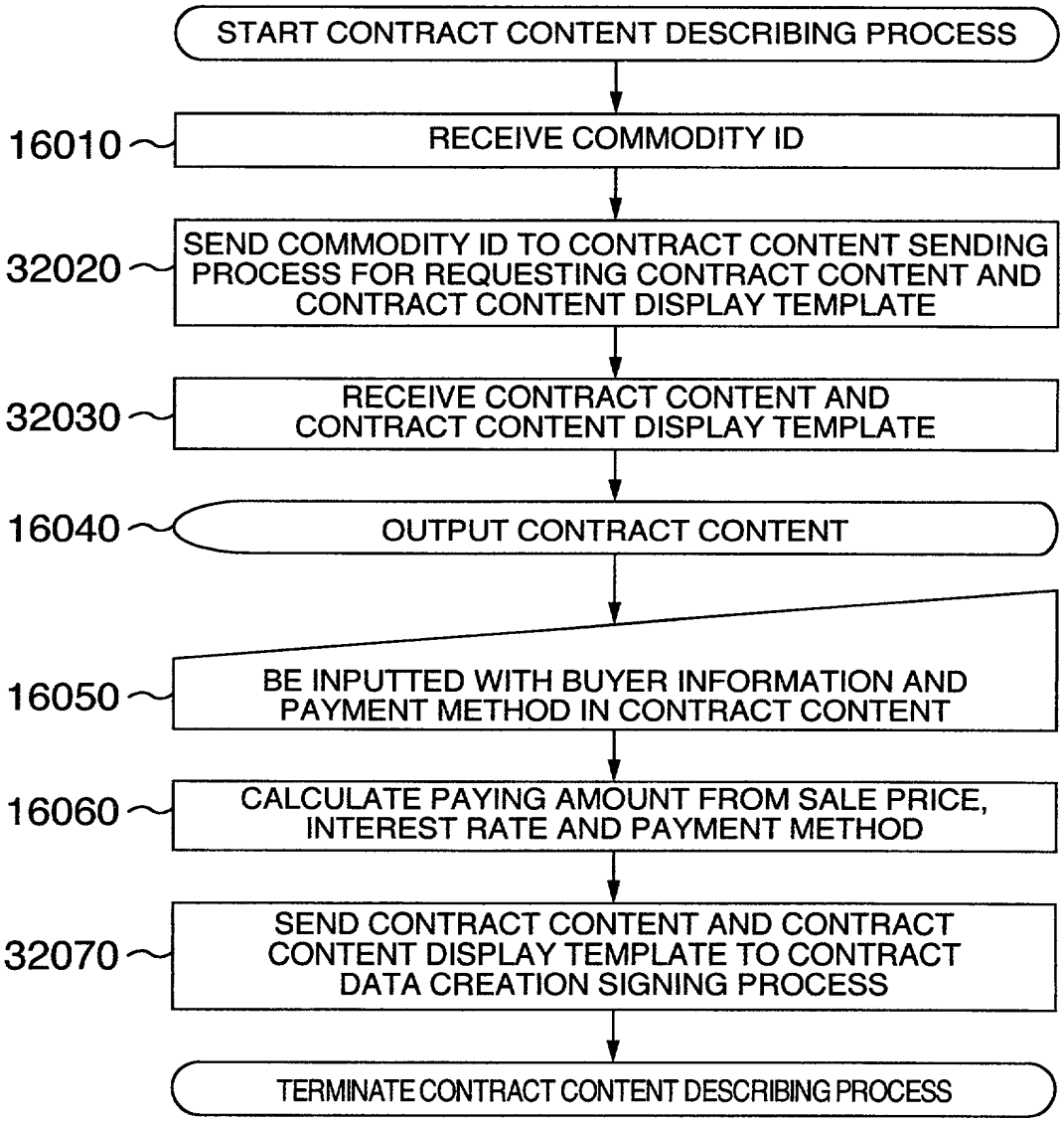

START CONTRACT CONTENT DESCRIBING PROCESS
16010
RECEIVE COMMODITY ID
32020
SEND COMMODITY ID TO CONTRACT CONTENT SENDING PROCESS FOR REQUESTING CONTRACT CONTENT AND CONTRACT CONTENT DISPLAY TEMPLATE
32030
RECEIVE CONTRACT CONTENT AND CONTRACT CONTENT DISPLAY TEMPLATE
16040
OUTPUT CONTRACT CONTENT
16050
BE INPUTTED WITH BUYER INFORMATION AND PAYMENT METHOD IN CONTRACT CONTENT
16060
CALCULATE PAYING AMOUNT FROM SALE PRICE, INTEREST RATE AND PAYMENT METHOD
32070
SEND CONTRACT CONTENT AND CONTRACT CONTENT DISPLAY TEMPLATE TO CONTRACT DATA CREATION SIGNING PROCESS
TERMINATE CONTRACT CONTENT DESCRIBING PROCESS

FIG.23

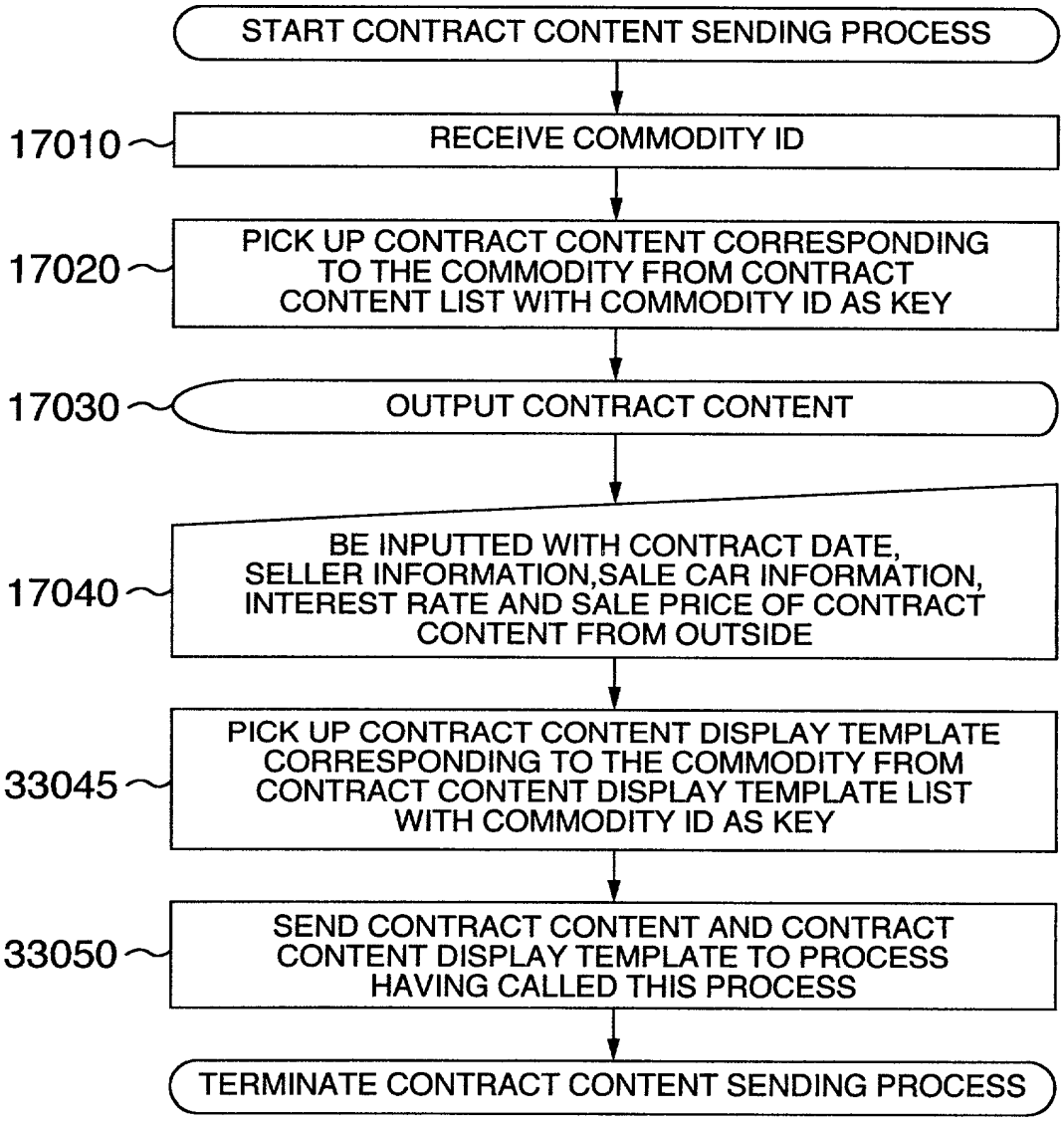

START CONTRACT CONTENT SENDING PROCESS
17010
RECEIVE COMMODITY ID
17020
PICK UP CONTRACT CONTENT CORRESPONDING TO THE COMMODITY FROM CONTRACT CONTENT LIST WITH COMMODITY ID AS KEY
17030
OUTPUT CONTRACT CONTENT
17040
BE INPUTTED WITH CONTRACT DATE, SELLER INFORMATION,SALE CAR INFORMATION, INTEREST RATE AND SALE PRICE OF CONTRACT CONTENT FROM OUTSIDE
33045
PICK UP CONTRACT CONTENT DISPLAY TEMPLATE CORRESPONDING TO THE COMMODITY FROM CONTRACT CONTENT DISPLAY TEMPLATE LIST WITH COMMODITY ID AS KEY
33050
SEND CONTRACT CONTENT AND CONTRACT CONTENT DISPLAY TEMPLATE TO PROCESS HAVING CALLED THIS PROCESS
TERMINATE CONTRACT CONTENT SENDING PROCESS

FIG.24

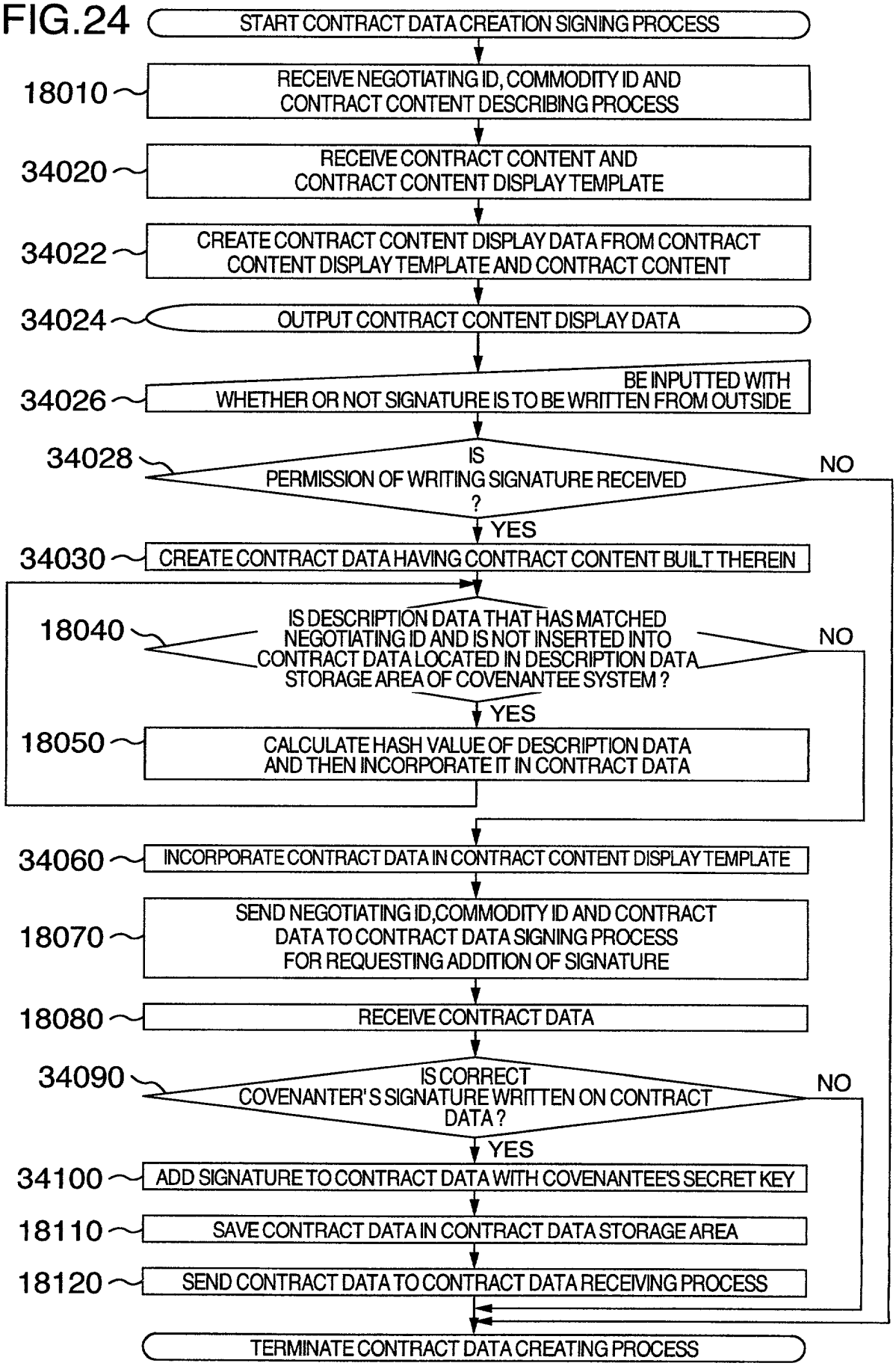

START CONTRACT DATA CREATION SIGNING PROCESS
18010
RECEIVE NEGOTIATING ID, COMMODITY ID AND CONTRACT CONTENT DESCRIBING PROCESS
34020
RECEIVE CONTRACT CONTENT AND CONTRACT CONTENT DISPLAY TEMPLATE
34022
CREATE CONTRACT CONTENT DISPLAY DATA FROM CONTRACT CONTENT DISPLAY TEMPLATE AND CONTRACT CONTENT
34024
OUTPUT CONTRACT CONTENT DISPLAY DATA
34026
BE INPUTTED WITH WHETHER OR NOT SIGNATURE IS TO BE WRITTEN FROM OUTSIDE
34028
IS PERMISSION OF WRITING SIGNATURE RECEIVED ?
NO
YES
34030
CREATE CONTRACT DATA HAVING CONTRACT CONTENT BUILT THEREIN
18040
IS DESCRIPTION DATA THAT HAS MATCHED NEGOTIATING ID AND IS NOT INSERTED INTO CONTRACT DATA LOCATED IN DESCRIPTION DATA STORAGE AREA OF COVENANTEE SYSTEM ?
NO
YES
18050
CALCULATE HASH VALUE OF DESCRIPTION DATA AND THEN INCORPORATE IT IN CONTRACT DATA
34060
INCORPORATE CONTRACT DATA IN CONTRACT CONTENT DISPLAY TEMPLATE
18070
SEND NEGOTIATING ID,COMMODITY ID AND CONTRACT DATA TO CONTRACT DATA SIGNING PROCESS FOR REQUESTING ADDITION OF SIGNATURE
18080
RECEIVE CONTRACT DATA
34090
IS CORRECT COVENANTER'S SIGNATURE WRITTEN ON CONTRACT DATA ?
NO
YES
34100
ADD SIGNATURE TO CONTRACT DATA WITH COVENANTEE'S SECRET KEY
18110
SAVE CONTRACT DATA IN CONTRACT DATA STORAGE AREA
18120
SEND CONTRACT DATA TO CONTRACT DATA RECEIVING PROCESS
TERMINATE CONTRACT DATA CREATING PROCESS

FIG.25

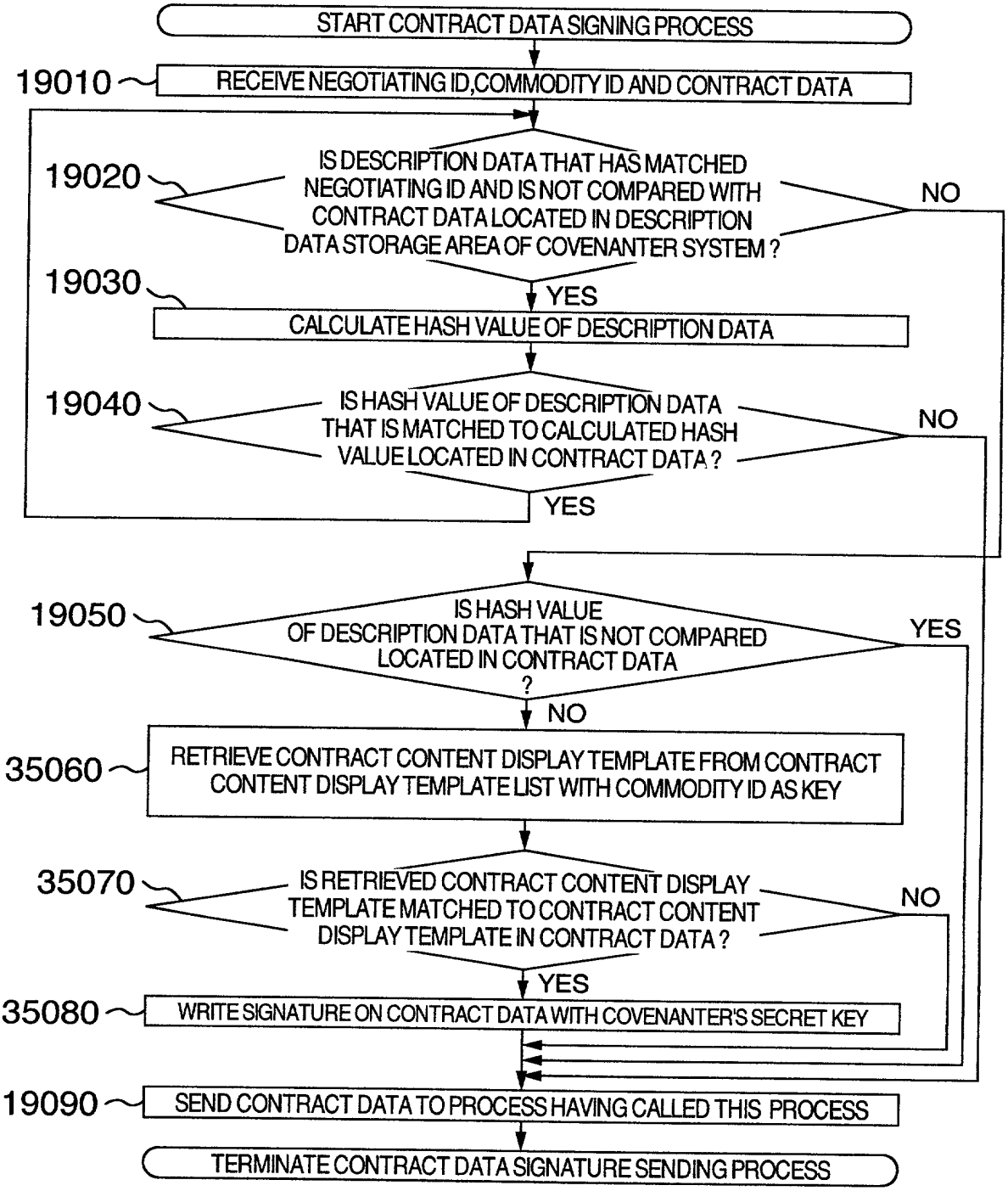

START CONTRACT DATA SIGNING PROCESS
19010
RECEIVE NEGOTIATING ID,COMMODITY ID AND CONTRACT DATA
19020
IS DESCRIPTION DATA THAT HAS MATCHED NEGOTIATING ID AND IS NOT COMPARED WITH CONTRACT DATA LOCATED IN DESCRIPTION DATA STORAGE AREA OF COVENANTER SYSTEM ?
NO
YES
19030
CALCULATE HASH VALUE OF DESCRIPTION DATA
19040
IS HASH VALUE OF DESCRIPTION DATA THAT IS MATCHED TO CALCULATED HASH VALUE LOCATED IN CONTRACT DATA ?
NO
YES
19050
IS HASH VALUE OF DESCRIPTION DATA THAT IS NOT COMPARED LOCATED IN CONTRACT DATA ?
YES
NO
35060
RETRIEVE CONTRACT CONTENT DISPLAY TEMPLATE FROM CONTRACT CONTENT DISPLAY TEMPLATE LIST WITH COMMODITY ID AS KEY
35070
IS RETRIEVED CONTRACT CONTENT DISPLAY TEMPLATE MATCHED TO CONTRACT CONTENT DISPLAY TEMPLATE IN CONTRACT DATA ?
NO
YES
35080
WRITE SIGNATURE ON CONTRACT DATA WITH COVENANTER'S SECRET KEY
19090
SEND CONTRACT DATA TO PROCESS HAVING CALLED THIS PROCESS
TERMINATE CONTRACT DATA SIGNATURE SENDING PROCESS

FIG.26

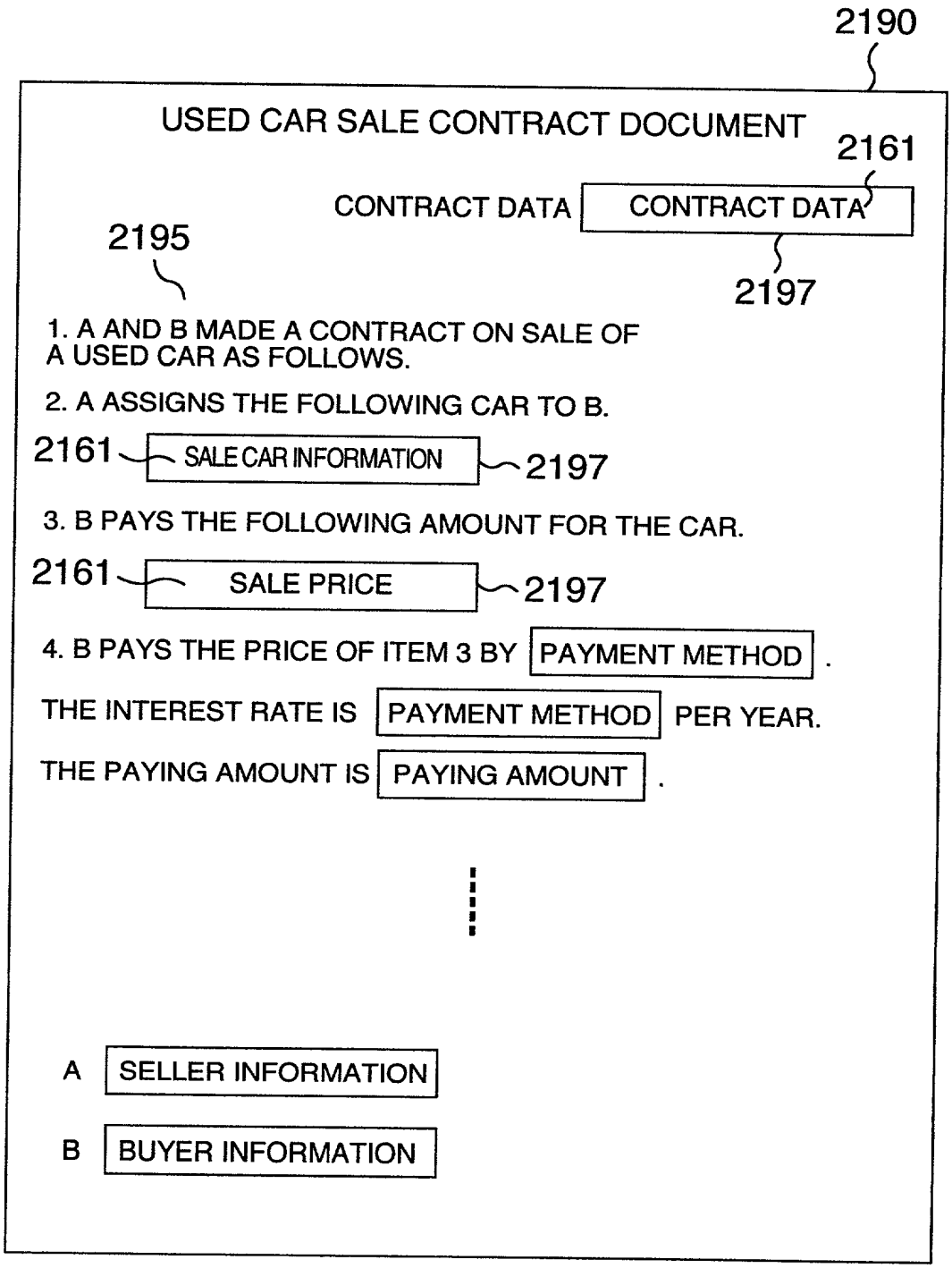

2190
USED CAR SALE CONTRACT DOCUMENT
2161
CONTRACT DATA
CONTRACT DATA
2195
2197
1. A AND B MADE A CONTRACT ON SALE OF A USED CAR AS FOLLOWS.
2. A ASSIGNS THE FOLLOWING CAR TO B.
2161
SALE CAR INFORMATION
2197
3. B PAYS THE FOLLOWING AMOUNT FOR THE CAR.
2161
SALE PRICE
2197
4. B PAYS THE PRICE OF ITEM 3 BY
PAYMENT METHOD
.
THE INTEREST RATE IS
PAYMENT METHOD
PER YEAR.
THE PAYING AMOUNT IS
PAYING AMOUNT
.
A
SELLER INFORMATION
B
BUYER INFORMATION

FIG.27

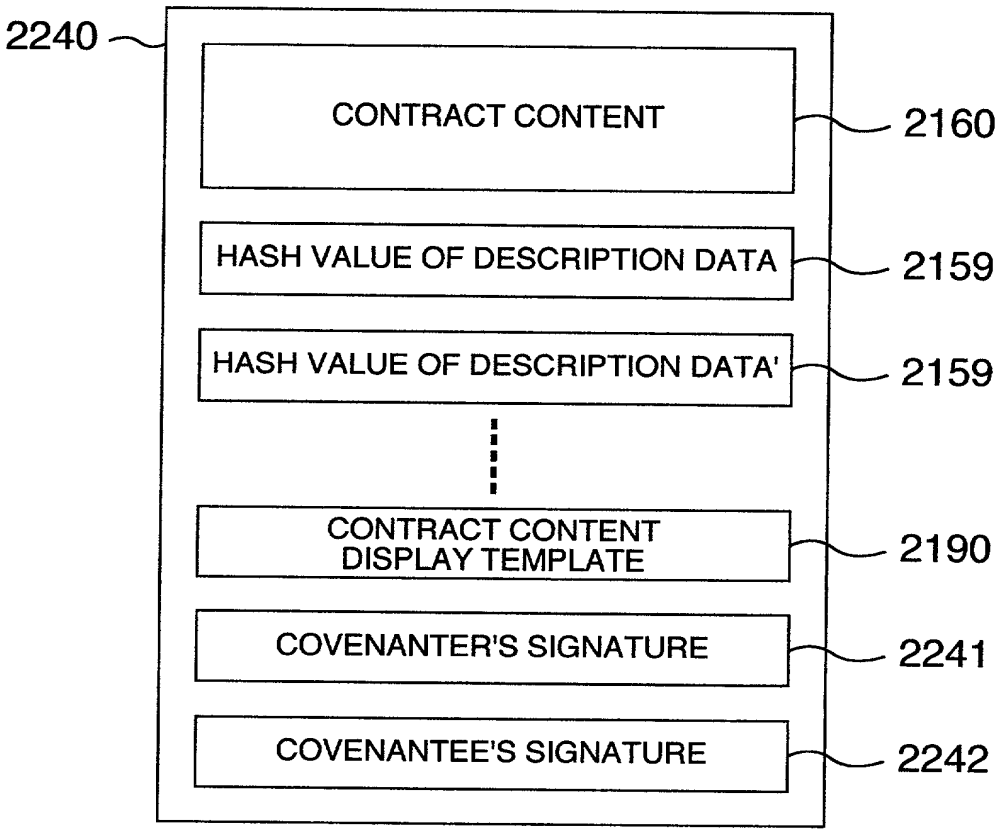

2240
CONTRACT CONTENT
2160
HASH VALUE OF DESCRIPTION DATA
2159
HASH VALUE OF DESCRIPTION DATA'
2159
CONTRACT CONTENT DISPLAY TEMPLATE
2190
COVENANTER'S SIGNATURE
2241
COVENANTEE'S SIGNATURE
2242

FIG.28

2130 COMMODITY ID	4140 CONTRACT CONTENT DISPLAY TEMPLATE 2190
0001	-------
0002	-------
0003	-------
0004	-------
⋮	⋮

FIG.29

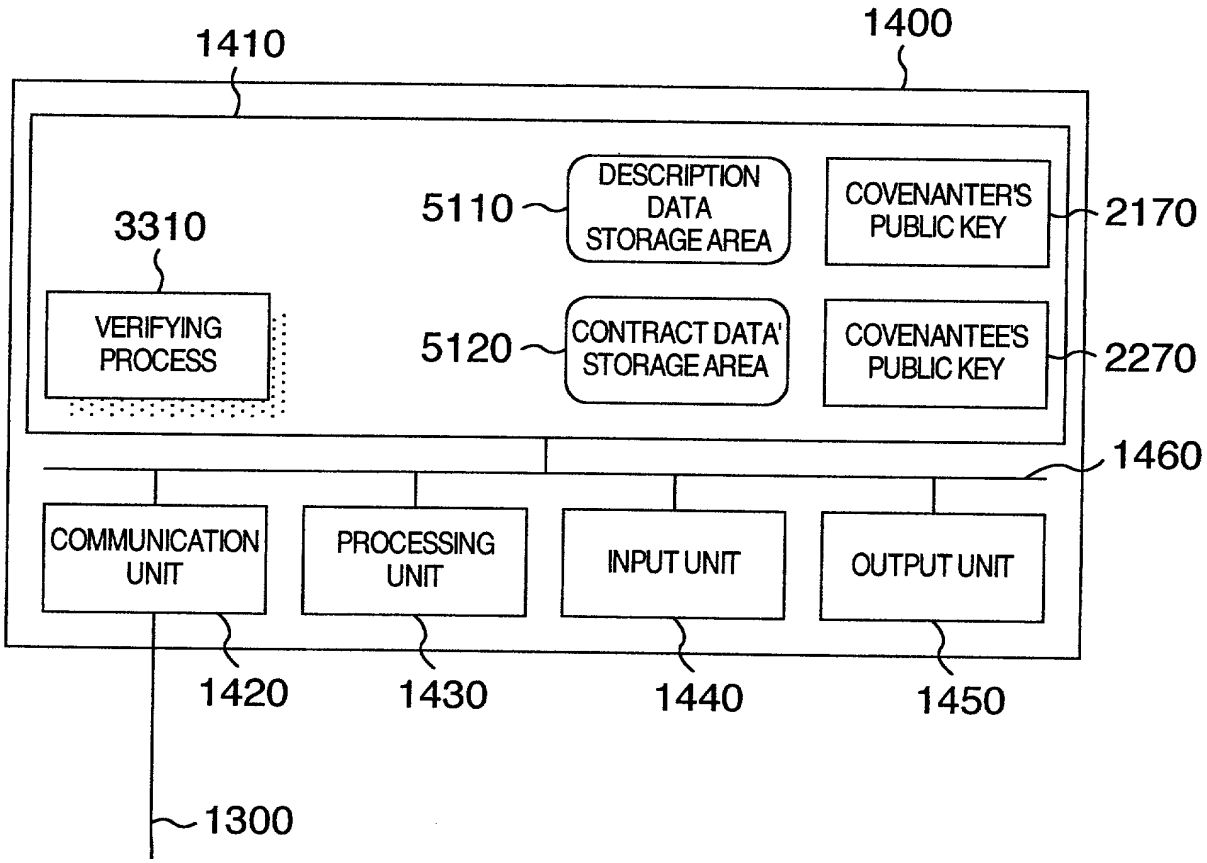


FIG.30

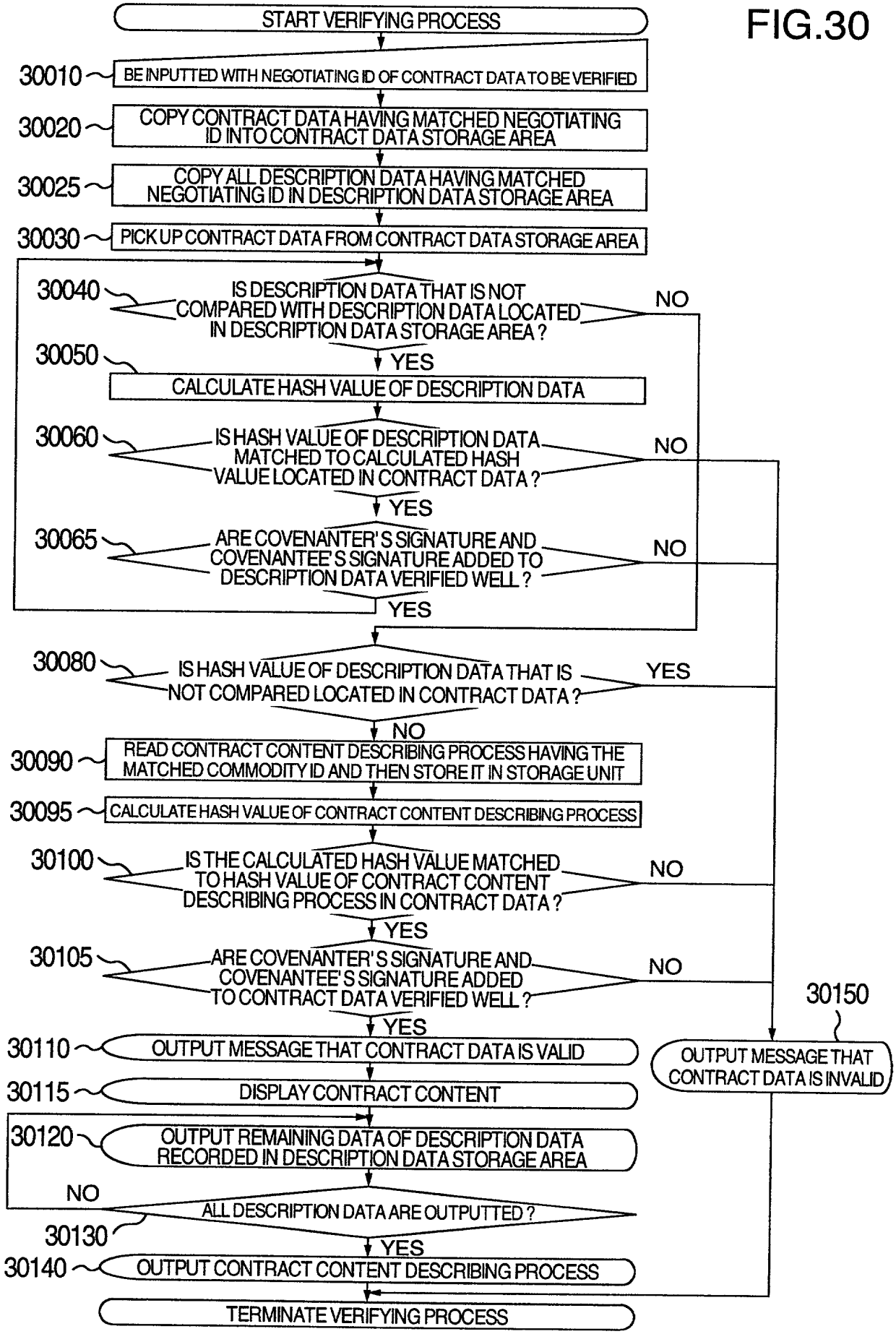
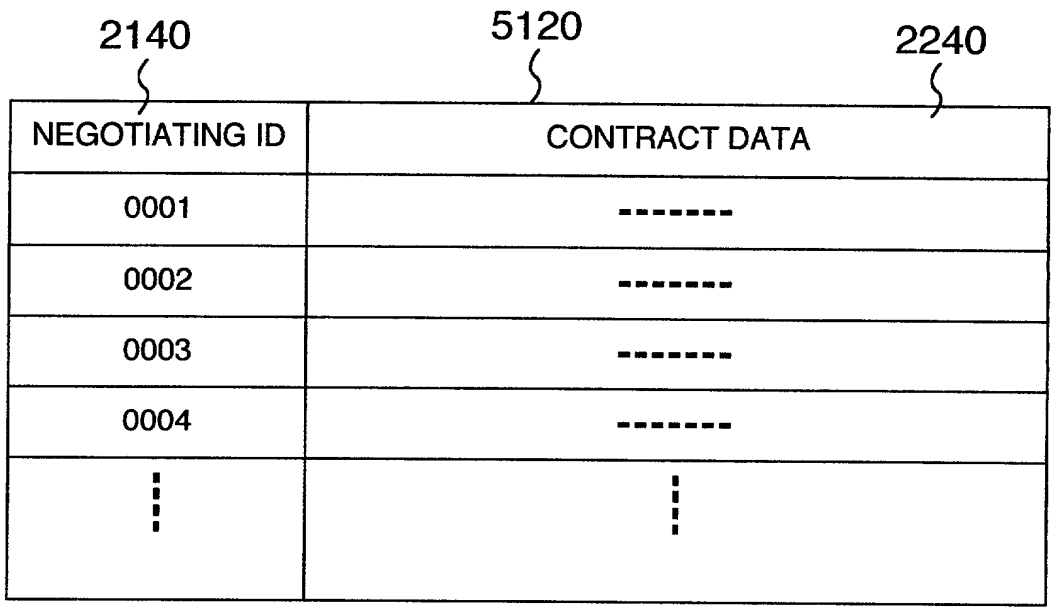

START VERIFYING PROCESS
30010
BE INPUTTED WITH NEGOTIATING ID OF CONTRACT DATA TO BE VERIFIED
30020
COPY CONTRACT DATA HAVING MATCHED NEGOTIATING ID INTO CONTRACT DATA STORAGE AREA
30025
COPY ALL DESCRIPTION DATA HAVING MATCHED NEGOTIATING ID IN DESCRIPTION DATA STORAGE AREA
30030
PICK UP CONTRACT DATA FROM CONTRACT DATA STORAGE AREA
30040
IS DESCRIPTION DATA THAT IS NOT COMPARED WITH DESCRIPTION DATA LOCATED IN DESCRIPTION DATA STORAGE AREA ?
NO
YES
30050
CALCULATE HASH VALUE OF DESCRIPTION DATA
30060
IS HASH VALUE OF DESCRIPTION DATA MATCHED TO CALCULATED HASH VALUE LOCATED IN CONTRACT DATA ?
NO
YES
30065
ARE COVENANTER'S SIGNATURE AND COVENANTEE'S SIGNATURE ADDED TO DESCRIPTION DATA VERIFIED WELL ?
NO
YES
30080
IS HASH VALUE OF DESCRIPTION DATA THAT IS NOT COMPARED LOCATED IN CONTRACT DATA ?
YES
NO
30090
READ CONTRACT CONTENT DESCRIBING PROCESS HAVING THE MATCHED COMMODITY ID AND THEN STORE IT IN STORAGE UNIT
30095
CALCULATE HASH VALUE OF CONTRACT CONTENT DESCRIBING PROCESS
30100
IS THE CALCULATED HASH VALUE MATCHED TO HASH VALUE OF CONTRACT CONTENT DESCRIBING PROCESS IN CONTRACT DATA ?
NO
YES
30105
ARE COVENANTER'S SIGNATURE AND COVENANTEE'S SIGNATURE ADDED TO CONTRACT DATA VERIFIED WELL ?
NO
YES
30150
OUTPUT MESSAGE THAT CONTRACT DATA IS INVALID
30110
OUTPUT MESSAGE THAT CONTRACT DATA IS VALID
30115
DISPLAY CONTRACT CONTENT
30120
OUTPUT REMAINING DATA OF DESCRIPTION DATA RECORDED IN DESCRIPTION DATA STORAGE AREA
NO
ALL DESCRIPTION DATA ARE OUTPUTTED ?
30130
YES
30140
OUTPUT CONTRACT CONTENT DESCRIBING PROCESS
TERMINATE VERIFYING PROCESS

FIG.31


2140
5120
2240
NEGOTIATING ID
CONTRACT DATA
0001
0002
0003
0004